Project Title: "Food Marketing targeted to kids: a collaborative and policy-oriented study in Argentina, Bolivia, Guatemala and Peru"

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Synthesis

Building on the concept of children's foodscapes, where food is found in the media, the Internet, food kiosks, at home and the school environment, etc., this project examined sources of food marketing influence on children and adolescents at different levels (individual, social, physical, and societal) in three South American countries-Peru, Bolivia, Argentina-and one Central American country-Guatemala. This project aimed to develop a multicomponent research strategy in Argentina, Bolivia, Guatemala, and Peru about child-oriented food advertising to promote policy changes to reduce childhood obesity. During the first year of this collaborative research project, each participant institution conducted research activities that resulted in the completion of six of the ten specific objectives determined in the original proposal. Moreover, some dissemination actions were carried out with success, and opportunities for continued collaboration and sustainability over time as a research consortium were defined by the end of year 1. During the second year, most of the research activities concluded and dissemination activities were implemented to showcase the results of the studies to targeted audiences (stakeholders). Nonetheless, given the COVID-19 pandemic situation, some of the original plans for dissemination and the remaining research activities had to be delayed or modified. Moreover, as a rapid response to the context and with IDRC's approval, all the participant institutions conducted a new research component to develop and validate a methodology to analyze the digital marketing strategies of the food industry during the COVID-19 pandemic context.

Executive Summary

Context

Childhood obesity has alarmingly increased during the last few years representing one of the most common NCD risk factors, and one of the growing problems in the global public health agenda (Sánchez, et. el, 2010).

In Argentina, increases in the prevalence of overweight—from 24.5% to 28.6%—and obesity—from 4.4% to 5.9%—have been reported among teenagers between 13 and 15 years of age between 2007 and 2012 (Ministry of Health, Argentina, 2013; Ministry of Health, Argentina, 2007). Data from 2007 estimated that obesity among Argentinean children under the age of 6 was 10.4% (Ministry of Health, Argentina, 2007). Similar rates have been observed in Peru, where 35.5% and 17.8% of the Peruvian population 15 years old and older are overweight and obese, respectively (Instituto Nacional de Estadística e Informática, 2016). In Bolivia the predominant alterations in the nutritional status of the student population (13 to 15 years) are overweight and obesity, with a prevalence of 22.5% and 4.7% respectively; with only 1.3% of children with low weight. The prevalence of overweight is higher in girls, but the percentage of obesity is higher in male adolescents. In women aged 15 to 19 years, the presence of overweight is 19.4% and in women between 12 and 16 years, 25.3% (PAHO-WHO, 2012).

Food advertising targeting children is recognized as one factor contributing to the obesity-promoting environment, and it is considered an important area for action in the prevention of obesity. In Argentina, an IDRC funded study conducted between 2013-2014 showed that ultra-processed food products were more frequently advertised during children's programs (98.9%) compared to those targeted to the general audience (93.7%, $P<0.01$). The top 5 food categories were desserts, dairy products, non-alcoholic sugary beverages, fast- food restaurants, and salty snacks. Special promotions and cartoon characters were much more frequent in ads targeting children. In the same study, children were estimated to be exposed to 61 unhealthy food products ads per week (Allemandi et. al., 2017).

Traditional advertising venues, such as radio and television, are being replaced by digital food and beverage marketing. The food industry is designing campaigns that take advantage of young people's engagement with social media, interactive games, mobile phones, online videos, and virtual worlds (Montgomery et. al., 2011). However, Internet food marketing appears to be an important research gap and further research and understanding seem crucial.

In Peru, as a result of an IDRC funded project, we now know that exposure to televised food advertising is longitudinally associated with unhealthy food snacking among children in Lima (Busse & Piotrowski, 2017) and that food advertising is pervasive, mainly focusing on sugary drinks and sweet snacks not only on television (Busse, 2016; 2018). This pattern of food advertising has been observed on Facebook, outdoors and point-of-sale locations such as bodegas (Busse, 2018). While this evidence is accumulating in the last few years (Busse & Díaz, 2016), the Peruvian government passed a law to regulate the promotion of ultra-processed food products and promote healthy foods (Law 30021-Diario El Peruano, 2013; Supreme Decree 017-2017-SA- Diario El Peruano, 2017). This existing law however will not fully regulate the marketing of ultra-processed food products at the point-of-sale, in particular bodegas (only in schools' kiosks). This remains an important gap in the policy. Besides, while one of the mandates of this law is to incorporate nutritional content in the national education curricula, it does not consider a media-literacy component in conjunction with the nutritional content. Overall, while the new policy in Peru is a positive step forward, there are still relevant areas for amendments.

Even though we know some factors that influence Peruvian children's food consumption, including their autonomy for purchasing snacks and "nagging" behavior (Busse & Díaz, 2016), we need a better understanding of the risk and protective factors that shape their consumption.

Research on the influence of the family environment, of children 6 to 13 years old, shows that low-educated caregivers tend to impose fewer restrictions to the amount of time their children can watch television and that as children grow older, their caregivers tend to talk less with them about the television content (Ruiz-Dodobara & Busse, 2018). Thus, the age of the children and the education level of their caregivers appear as moderating variables that shape their exposures to food advertising, a known predictor of unhealthy food habits among children (Busse & Piotrowski, 2017). However, the family and school environments may send opposite signals when children become teenagers. Research-based on in-depth interviews with peri-urban adolescents, between 15 and 17 years old, showed that parents tend to promote healthy habits by offering their children guidance about healthy foods. While this "protective" factor is evident in the households of teenagers, they find unhealthy food products available in their schools (Banna, Buchthal, Delormier, Creed-Kanashiro, & Penny, 2016). Despite these studies, we need to better understand the contextual factors that influence children's food consumption, especially as obesity rises in the Latin American region (Corvalán et al., 2017).

In Guatemala, the increasing presence of food marketing is notoriously designed to influence children's consumption habits and increase demand. One powerful marketing technique that often receives less attention than others (e.g., television) is point-of-sale (POS). In Guatemala, an IDRC funded study found that marketing on snack food packages is a key strategy to target children by influencing taste and preferences (Letona, Chacon, Roberto, & Barnoya, 2014). This study also found that child-oriented snacks are available in all stores inside and around schools, and the most common types were savory snacks, pastries, cookies, and sugar-sweetened beverages (Chacon, Letona, & Barnoya, 2013). Marketing on snack food packages is a key strategy to target children inside and around schools (Chacon, Letona, Villamor, & Barnoya, 2015). Cartoon and spokes characters, raffles, premium offers, and health claims appearing on the packaging are all used to attract children´s attention, influence preferences, and improve taste (Chacon et al., 2013; Letona et al., 2014). Despite the evidence, child-oriented food advertising has not yet been regulated in Guatemala. Furthermore, little is known about other components, like the different impact points of POS might have, depending on gender in LMICs like Guatemala. In this regard, young females are more vulnerable to food advertising on television compared to men (Anschutz, Engels, van der Zwaluw, & Van Strien, 2011). In addition, to the best of our knowledge, there is no evidence on how bodegas owners are persuaded by the food and beverage industry to place POS advertising on their premises.

Bolivia lacks studies about the influence of food advertising on children. Thus, the proposed project replicated the work conducted by FIC Argentina, adjusted to the Bolivian context, aiming to provide scientific data to public policy decisions.

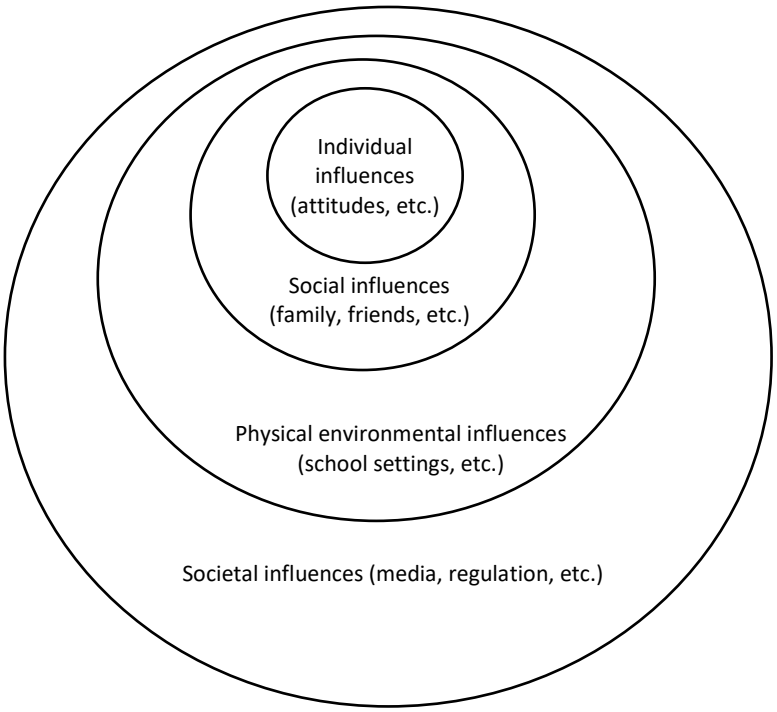
In light of the different regulatory landscapes of Argentina, Bolivia, Peru, and Guatemala, the final goal of this proposed project was to provide evidence to support policy at different levels in the four countries involved in this project and to promote policy changes at the regional level. Also, it aimed to generate data and provide in-depth knowledge on gender and marketing targeted to kids.

Conceptualization of the environmental influence

The conceptual framework guiding our project was rooted in the concept of "foodscape" (Brembeck & Johansson, 2010). Brembeck and Johansson (2010) propose that a "foodscape is the sum of all the places where food and eating are actualized in one way or another: at home, in school, at restaurants and cafés, in shops, in advertising, on TV and the Internet, etc." (p. 800). However, these foodscapes are sources of tension for children and adolescents, as they have to make sense of mixed signals sent by their environment. Thus, and following the theoretical framework (Story, Neumark-Sztainer, & French, 2002) that guided research by Banna and her

colleagues (2016), we similarly understand these influences emerging from four levels: an individual level (e.g., individual attitudes), a social level (e.g., friends and family), a physical environmental level (e.g., the school setting) and a societal level (e.g., the media or countrywide regulation), (Figure 1):

Figure 1: Children's foodscapes emerge at four levels



Given the different foodscapes that children encounter at each of the four levels, we generated evidence to support policies addressing these different foodscapes. Our project objectives responded to the policy needs of each country by attending to the different levels at which children and adolescents experience influence.

The following section shows general and specific objectives of the project.

General objective

To develop a multicomponent research strategy in Argentina, Bolivia, Guatemala, and Peru about child-oriented food advertising in order to promote policy changes to reduce childhood obesity.

Specific objectives

In Argentina

1. To assess the main discussions regarding food marketing and gender in international literature during the last 10 years
2. To describe beliefs, attitudes, and perceptions of young boys and girls from different socio-economic sectors about food marketing strategies in Argentina.

In Bolivia

3. To analyze the regulatory framework for food advertising aimed at girls and boys in Bolivia

4. To determine the frequency of appearance and characteristics of food advertising for children in traditional and alternative media.
5. To determine the quality and nutritional content of the foods advertised in traditional and alternative media, aimed at children.
6. To analyze the impact and influence of food advertising aimed at children, through a study of perceptions about eating behavior and beliefs in parents and heads of families in different socioeconomic strata.

In Peru

7. To identify and characterize the family factors influencing children's decisions to purchase unhealthy foods in addition to the influence of food advertising.

8. To design, implement and evaluate a media literacy intervention that will empower children and adolescents to mitigate the persuasive effects of food advertising outside the school settings

In Peru and Guatemala

9. To assess the representation of gender in food and beverage advertising in bodegas around public schools.

In Guatemala

10. To determine the strategies used by the food and beverage industry to place point-of-sale advertising and other marketing strategies in bodegas around public schools.
11. To compare the Food Retail Environment Index between three neighborhoods of different socioeconomic status in Guatemala.
12. To determine the relationship between the food and beverage industry and schools in Guatemala City.

In Argentina, Bolivia, Peru, and Guatemala[1]

13. To design and validate a methodology for monitoring and evaluating the internet marketing of multinational fast-food chains in response to the COVID-19 pandemic

Country-level results

Argentina

FIC Argentina's research objectives included a scoping review about gender and food marketing targeted to children, and the analysis of focus group data of beliefs, attitudes, and perceptions of young boys and girls from different socio-economic sectors about food marketing strategies in Argentina. These research objectives were designed to fulfill a research gap in the literature about food marketing to children. On the one hand, gender analysis in food system research is still a promising area. The scoping review aimed to shed light on the literature gaps and methodological challenges for including a gender perspective in this type of analysis. On the other hand, teenagers' perspectives are usually not included in most food marketing analysis. Also, despite the amount of evidence regarding food marketing to children, Internet food marketing appears to be an important research gap and further research and understanding seem crucial. This project contributed to a more in-depth understanding of food marketing on the Internet and social media from the teenagers´ perspective.

[1] This new objective was added to the Project in month 24 but it started in month 25, as a result of the extension of the Project.

The scoping review revealed that although food advertising is considered neutral in terms of gender, gender plays an important role in the development of marketing techniques: boys and girls react in a different way to different marketing techniques. Also, boys could be more affected by food marketing not only because they show greater exposure to food advertising, but also because food advertisements usually are more male-oriented. However, these conclusions need further analysis. The male dominance in food industry advertising to children might be more a reflection of the cultural bias than an explicit decision made by food companies. This scoping review is a departure point for future analysis and was especially useful for the analysis of data collected in different research activities of the current research project.

The results from the qualitative research with male and female teenagers were coherent with previous research that highlights the intersection of different spheres when analyzing teenagers´ food consumption patterns. Also, focus groups discussions agreed with previous literature that highlighted that health awareness does not necessarily translate into health consciousness. Teenagers are conscious of the high exposure to food marketing as a group. However, they do not perceive themselves as vulnerable to weight gain or disease-related with unhealthful eating patterns. One aspect considered thought-provoking was the fact that teenagers engage effectively with food concerning the environmental agenda. However, the consumption of unhealthy food products and food advertising is not perceived to be affected by this agenda.

Research capacities regarding food marketing and gender among the research team were strengthened during this project. Also, many researchers in the early stages of their careers were part of the project and gained relevant research skills. The development of the project involved different instances of capacity-building inside the team and strengthened the collaboration among different research groups of the region.

The main outputs of the research project included the development of scientific publications, meetings with decision-makers, and the launching of a mass communication campaign based on two videos that were conducted in the context of this research project. The videos had more than 20,000 views on social media. The campaign was successful for policy advocacy purposes and institutional visibility.

Based on the research project it is important to develop more research focused on food marketing and gender disparities. Also, it is highly relevant to develop innovative methodological tools to assess children's and teenagers´ exposure to digital marketing.

Bolivia

FIC Bolivia implemented four research objectives that generated promising results, as the studies conducted were unprecedented In Bolivia. To carry out these studies, the methodology developed and implemented previously by FIC Argentina was considered, using the guidelines and protocols as a basis, after validation and contextualization.

Through the analysis of the national regulation and policy, we developed a comparative analysis with similar regulation of countries of the region and mapped actors involved in the regulation of advertising. Bolivia has approved Law No. 775 and this includes food advertising, but it does not have the corresponding regulations, which makes it unenforceable and unfeasible. Likewise, the analysis of the regulations of other Latin American countries and the international jurisprudence has concluded that countries like Brazil, Ecuador, Mexico, and Chile regulate and

penalize food advertising through complementary regulations to national laws and that this is necessary for the laws' enforcement.

Public institutions that are responsible for enforcing the regulation of food marketing have also been identified. However, since there is an incomplete regulation, they are unable to carry out actions. Regarding this, international cooperation agencies (represented mainly by the United Nations), have developed international guidelines that demonstrate that exposure to food marketing is related to overweight in children and teenagers. They have also provided a series of recommendations to the Bolivian state that are urgent and need to be considered when developing the regulations.

Regarding the organized civil society, there is no presence of NGOs or organizations that are focused on advocating for the regulation of food marketing. This is an important factor that weakens the possibility to have an influence on the State on these matters.

Concerning objective 4, 5 open signal and 4 cable television channels have been monitored for an entire week in April, July, and December 2019. We found that food and beverage advertising is segmented according to different programming schedules. In the morning, during cooking shows aimed at adults, soft drinks, meats and canned foods, table water, milk, and cookies are advertised. In the evening, advertising seems to be mostly aimed at children and teenagers, as tv commercials were mainly of soft drink brands, cereals, and malt-based drinks. We also found that approximately 25% of advertising has the presence of public figures. Moreover, advertising aimed at adults is related to exercise and well-being, the natural components of the products and, healthy habits. Conversely, advertising aimed at children and teenagers is mainly related to vitality, youth, strength, sport, using young characters to denote this.

Of the total food products advertised, 57 of them have been identified and analyzed through the nutrient profile model developed by the Pan American Health Organization. For objective 5, the analysis showed that 11 categories of ultra-processed foods have been identified (soft drinks 23%; juice concentrates, sweetened juices and fruity drinks 18%; sauces and dressings 13%; cakes, pastries, and desserts 10%; sweetened breakfast cereals 10%; sweet and salty snacks 10%; candy or sweets 5%; ready-to-heat dishes and meals 5%; energy bars and snack bars 3%; sweetened milk and powdered milk drinks with flavorings 3%; canned and instant soups 3%; and products to import 3%).

Approximately 66% of these foods have a low nutritional value and thus, they do not meet the nutritional requirements necessary to be advertised according to the nutrient profiling system used. Another key finding was that the nutritional facts information on food products is presented in very different formats. Furthermore, soft drinks that were advertised and analyzed, exceed the parameters established for sugar in a 200 ml serving. Also, 20% of health and nutrition claims on food products do not match nutrition labeling.

Finally, for objective 6, we conducted semi-structured, in-depth interviews with 32 fathers, mothers, or caregivers of children and teenagers between 6 and 13 years old. The aim was to gather information about the knowledge, attitudes, and practices in the acquisition of food and the influence of advertising on food preferences, through semi-structured interviews. A total of 80% of the interviewees mentioned that their daughters and sons are exposed to television during the day; 40% of those interviewed mentioned having access to cable television. Additionally, 70% of those interviewed stated that they intend to control what the children can watch on TV. Moreover, there seems to be an important impact on food marketing in children and adolescents, as 60% of the interviewees mentioned their kids demand food products that

they watch on TV. The remaining 40% mentioned that their children demand ultra-processed foods or sweets which they have seen advertised through other media (mail or billboards).

One major outcome of the project in Bolivia was the formation of a Scientific Committee, comprised of various Bolivian institutions, which provided technical cooperation and promotion for the project. Additionally, FIC Bolivia participated in a fair to commemorate La Francophonie Day in La Paz, which was an opportunity to spread the research project to the population that attended the fair. Lastly, the project helped create a space for dialogue between the Government and Civil Society, to accompany research and initiatives such as this project.

Peru

The main research results from Peru were the following.

For specific objective 7, we found that the food-related- practices of children and adolescents from a public and a private school located in Lima, Peru, were differently influenced by various factors present in their foodscapes. Individual traits, such as age and gender, as well as socioeconomic status (SES), determine their agency and influence how institutional factors (ideas/beliefs, rules/regulations), social factors (interaction with family, peers, school staff), and the physical environment, affect their eating practices.

For specific objective 8, the intervention showed null effects in the majority of the outcome variables. However, for elementary school students, the intervention impacted survey items related to attitudes towards eating unhealthy foods and "Skepticism toward advertising" while, for high-school students, items related to "Understanding selling intent" and "Understanding persuasive intent."

Results of the study linked to specific objective 9 are thoroughly commented on in the section below, corresponding to Guatemala and Peru.

The project also had some important outcomes in Peru during this 2-year and 3 months period:

Regarding capacity building, Project Coordinator for Peru, MSc Lucila Rozas Urrunaga, developed her capacities in project management, becoming proficient in keeping a record of all of the technical and financial aspects of the project. Ms. Rozas also strengthened her research skills, as she was able to design a qualitative methodology for the collection of data for the study linked to specific objective 7 and for the new component developed in the context of the COVID-19 pandemic (objective 13). Ms. Rozas was also in charge of leading the write-up of academic manuscripts for two of the specific research objectives (objective 7 and objective 9, together with Ms. Sophia Mus from Fundación Aldo Castañeda). Moreover, she developed important interpersonal skills for networking with relevant stakeholders, as well as communication skills with academic and non-academic actors.

Ms. Rozas and the Principal Investigator, Peter Busse (Ph.D.), together with colleagues of Fundación Aldo Castañeda (Joaquín Barnoya, MD) and FIC Bolivia (Ms. Alejandra Garrón), developed skills for open data management and curation, as a result of obtaining a grant for strengthening the management and sharing of research data, handed by IDRC (grant number 109059-020). The proposal and subsequent data curation project were developed using data obtained as a result of specific objective 9. This also strengthened collaboration among members of the consortium.

Research assistants that participated in the study strengthened their skills in qualitative and quantitative data collection. Moreover, they also received training on the use of computer-assisted qualitative data analysis software (CAQDAS) NVivo, which they used for data analysis.

We were also able to transfer knowledge to a target population, as school teachers that participated in the media literacy study received training and materials for the replication of workshops with students to develop critical thinking regarding food marketing techniques employed by the food industry. From the participant schools, one of them showed openness to continue implementing and improving the media literacy intervention, although it is uncertain to know to which point this will effectively happen, as the continuation of the collaboration with the researchers was indeterminately suspended due to the COVID-19 pandemic. However, the intervention has shown potentiality for scalability.

Some relevant knowledge transfer to stakeholders has also been identified. One particular situation where this happened is through the involvement of the Principal Investigator in a consultation meeting with the National Institute for the Defense of Competition and the Protection of Intellectual Property (INDECOPI). As this institution is in charge of monitoring and auditing industry compliance with the food marketing restrictions established by the Law N°30021 ("Healthy Eating Law") and its regulations, input provided by Mr. Busse was important for providing evidence and criteria that would allow a clearer identification of the cases where there was non-compliance with the law.

The most important outputs to this moment, are the following:

As a result of the development of the studies from specific objectives 7, 8, and 9, three research manuscripts have been developed. The manuscript related to specific objective 7, entitled *"Foodscapes of children and adolescents attending two schools in Lima, Peru"* (working title) has been submitted to the journal *Appetite*. The Manuscript related to specific objective 8 is going through final adjustments and should be ready for submission to a peer-reviewed journal soon. Finally, the details of the manuscript developed for specific objective 9 can be found below, in the section for Guatemala and Peru, which was submitted to the journal Critical Public Health.

Moreover, as part of the media literacy study linked to specific objective 8, we developed a dossier that included materials for school teachers to use during the media literacy workshops and a guide for implementation in a school classroom setting, with specific details for teachers of primary and secondary school.

We have also developed some dissemination materials showing the results of the project. One of these materials is a policy brief with the results of the study linked to specific objective 7. This policy brief can be found in Annex 3 Peru. This material has not been yet released and will be sent to relevant stakeholders once the manuscript for this study is published. The study has also been showcased in a Research Project Catalogue developed by Instituto de Investigación Científica (IDIC) of Universidad de Lima (https://www.ulima.edu.pe/sites/default/files/idic_catalogo_de_investigaciones_2019.pdf), as well as in a post in the blog *Scientia et Praxis*, of IDIC (see: https://www.ulima.edu.pe/idic/blog/indecopi-sobre-octogonos). Finally, a dissemination event was organized in December 2019, with the participation of Boyd Swinburn, FAO, and CRONICAS – Universidad Cayetano Heredia. A summary of the development of the event can be found here: https://www.ulima.edu.pe/instituto-de-investigacion-cientifica/noticias/fomento-de-los-ambientes-alimentarios-saludables.

Guatemala and Peru

For specific objective 9, the teams in Guatemala and Peru, with the assistance of the marketing agency DUO Marcas, developed an instrument to assess gender in printed media. A total of 200 print advertisements from Guatemala and Peru were evaluated and, overall, 51% corresponded to sweetened sugar beverages (SSB). In Guatemala, 36% of the ads showed a main character identified as male, and in Peru this happened only in 14% of the ads. In Guatemala, 22% of the main characters were male animated characters. Most celebrities that appeared in the ads were male (9 of 13 ads). The visual orientation of the ads was masculine in 27% of the ads in Guatemala and 17% in Peru. The main outputs for this study are 1) two complimentary image and quantitative datasets and supporting documentation that can be found in the following persistent identifier (https://doi.org/10.3886/E122441V4); 2) a manuscript related entitled *"Gender representation in food and beverage print ads of corner stores in Peru and Guatemala"*, led by Ms. Sophia Mus and Ms. Lucila Rozas under the supervision of Principal Investigators Joaquín Barnoya and Peter Busse. This manuscript was submitted to the journal Critical Public Health*;* 3) a data descriptor entitled *"Quantitative and image datasets of gender assessment of food and beverage print advertisements found in corner stores in Guatemala and Perú",* which was submitted to the data journal *Scientific Data*.

Guatemala

In this collaborative research project, we aimed to examine different sources of food marketing influence on children, to increase the knowledge about food marketing, and provide evidence to promote policy changes to reduce child obesity. Five specific objectives were developed in Guatemala. **Specific objective 9** has been thoroughly developed in the previous section. For **Specific objective 10** of the project*, To determine the strategies used by the food and beverage industry to place point-of-sale advertising and other marketing strategies in bodegas around public schools,* we conducted, 30 in-depth interviews in Guatemala City (15) and Chisec (15). According to our findings, store proprietors and UPFs distributors develop a companionship relationship where they negotiate promotions, information, product placement, stocking, and POS advertisement. The food and beverage industry has established a successful relationship with proprietors to guarantee UPF availability and advertising in corner stores in urban and rural Guatemala. Considering that proprietors in Guatemala are unlikely to promote and support the availability and advertising of healthy foods, healthcare policymakers should take into account this relationship when designing, planning, and implementing UPF regulations in Guatemala and elsewhere. To further explore the concept of foodscape we *compared the Food Retail Environment Index between three neighborhoods of different socioeconomic statuses in Guatemala* **(Specific objective 11).** We identified 280 corner stores in the City and 204 in Chisec. Corner store density was higher in the middle- urban and low-SES rural areas; fast food restaurant density was higher in the high-SES urban area. Using the RFEI cutoff 3.79, all surveyed neighborhoods were classified as food swamps. The highest RFEI was found in the middle-SES urban and low-SES rural areas. For **specific objective 12,** to determine the relationship between the food and beverage industry and schools in Guatemala City, we conducted 20 interviews with school principals exploring the following themes: products from the industry the school sells, management of the store, knowledge on laws for feeding students and history of the relationship between school and industry. The results found can be interpreted through the concept of school commercialization that Molnar & García used to describe the phenomenon of the food and beverage industry using the schools as a point-of-sale and marketing enclave. The

concept can also be applied to the phenomena found in Guatemala because the industries try to colonize a space that is meant to educate students to influence their dietary habits.

Outputs:

- The main output for specific objective 9 has been explained in the previous section.
- For specific objective 10 of the project, Aiken Chew wrote a manuscript alongside Dr. Barnoya, Dr. Peter Roloff, and Sophia Mus. This manuscript was submitted to the Journal of Environmental Nutrition and Hunger.
- For specific objective 11 of the project, a manuscript was successfully submitted to the CDC Preventing Chronic Disease Journal that has a section called GIS Snapshots. This article was published and is available at https://www.cdc.gov/Pcd/issues/2020/20_0029.htm.

Outcomes:

- Project management and administration have been a continuous learning experience for Sophia Mus, under the guidance of Joaquin Barnoya. Through this project, Sophia Mus also learned to guide and coordinate teams through the various objectives of the project. Working with more experienced colleagues has broadened SM´s network. Sophia also strengthens her writing skills through the preparation of IDRC´s reports and the process of manuscript writing and development. A process guided by Joaquin Barnoya and Peter Busse. Additionally, Sophia reinforced her qualitative skills through aims 1 and 5 of the project.
- Aiken Chew improved his interview abilities through aims 2 and 4 of the project. Aiken also had the opportunity of increasing his qualitative skills by improving his coding abilities and learning to use Deedoose Software. Aiken Chew improved his writing skills and learned how to submit manuscripts in peer-reviewed journals while expanding his professional networks with more experienced collaborators (Joaquin Barnoya, Alyssa Moran, and Peter Roholoff). Lucia Sierra, a recent anthropology graduate, improved her interviewing and transcription skills. Through this process, she also learned the basics of coding and using Deedoose Software.

Argentina, Bolivia, Guatemala and Peru

Due to the pandemic COVID-19 and its possible contribution to the unhealthy food environment, we sought to design and validate a methodology for monitoring and evaluating the social media marketing strategies of multinational fast-food chains in response to the COVID-19 pandemic (specific objective 13). Two phases of this objective were developed: first, a random sample of posts was analyzed qualitatively to examine COVID-19 related content. In the second stage, a quantitative content analysis tool was developed based on the existing literature, and the results obtained during the first stage of qualitative analysis. This tool was used to analyze the entire sample of posts extracted from the Facebook pages of five selected fast-food brands present in the four countries: Argentina, Bolivia, Guatemala and Perú. This tool was validated and statistical analysis was applied to identify which of the variables could be recommended for use in a similar study. The main outputs that resulted from this objective are: 1) a research protocol; 2) a data collection instrument; 3) a coding manual; 4) a document explaining the process of tool validation, and 5) a document with the main analysis results.

Research consortium for the study of food marketing in Latin America

Over the two-year period of the project, the teams from the four institution learned that we could synergistically work as a collective with a similar mission and in an efficient manner. Therefore, we decided to establish a research consortium for the study of food marketing in Latin America with a mission to plan, design and implement research and policy-oriented projects around the marketing of food products with a food systems perspective. We believe this consortium benefits from the research profile of Universidad de Lima and Fundación Aldo Castañeda, and the research and policy influence profile of both FIC Argentina and FIC Bolivia. We also learned that we can engage in capacity building activities throughout specific studies, such as the design and validation of a methodology for monitoring and evaluating the social media marketing strategies of multinational fast-food chains in response to the COVID-19 pandemic, which we conducted towards the end of the project as part of the project extension period. As a consortium, we plan to seek new funding opportunities to collectively conduct projects with local as well as regional policy impact.

Research findings

The main findings of the research linked to each countries' specific objectives are presented in the next subsections by country.

Argentina

The activities fulfilled to date include those related to complete Objectives 1 and 2. They are described below:

Specific Objective 1

To assess the main discussions regarding food marketing and gender in international literature during the last 10 years

The review sought to identify papers that addressed the main theoretical discussions regarding gender and food marketing to children. Also, the review included papers that addressed how food marketing targets boys and girls in a different way; how boys and girls respond to food marketing, and what are the main differences identified regarding marketing strategies and conventional versus non-conventional communication channels in food marketing.

Results of the narrative review:

The narrative revision included 42 studies: 19 experimental designs; 15 observational designs, 4 qualitative studies, and 4 content analysis.

The narrative revision includes 42 studies: 18 experimental designs; 16 observational designs, 4 qualitative studies, and 4 content analysis.

The 42 studies described studies conducted in 17 countries: India, Estados Unidos, Australia, Canadá, Holanda, Bélgica, Brasil, Chile, Austria, Islandia, Portugal, Noruega, Dinamarca, España, Suecia, Perú y Nueva Zelanda.

Participants include children from 3 to 19 years old. Most studies used inclusion criteria that included any children or adolescents and not specific populations. Only a few studies included non-traditional mass communication media.

The main results of the narrative review were:

Effects of food marketing on food intake. The role of gender

Most studies identified do not consider that the effects of food exposure on food intake vary by gender. Only two studies identified differences. Most studies were conducted in children (>=3, <=14). The only study conducted in young adults suggests that especially women are vulnerable to eating more snack food when exposed to food commercials. Other factors such as maternal encouragement, brand knowledge, and nutritional status may alter the relationship of food marketing exposure, food intake, and gender.

Effects of Food Marketing on Children's Preferences. The role of gender

Most studies found that boys were more influenced by commercials than girls (n=4). The only experimental study that showed different results was conducted on the Internet and included other variables such as nutritional knowledge and persuasive intent of the advertisements. Healthy messages may affect boys' and girls' preferences in the same way: messages about

nutrition and physical activity in child-directed commercials for nutrient-poor food/drinks created health halo effects in both genders.

Effects of different marketing techniques on children´s preferences. The differences by gender.

Both experimental studies and qualitative designs show that boys and girls perceive and respond in a different way to different marketing techniques. Experimental designs show that the influence of toy premiums to shift eating habits may depend upon the intrinsic appeal of the toy, which may differ across gender. Qualitative studies show that gender differences emerged in the focus group discussion of why certain products were chosen over others or were more appealing than others.

Perception of girls and boys of food advertising.

Different qualitative studies aim to study different aspects of the perceptions of boys and girls of food advertising. The qualitative evidence shows that young boys and girls are aware of industry marketing specific foods or beverages as being predominantly either 'male' or 'female'. Also, studies conducted in young adults show that women may be more supportive of the regulation of food marketing than boys.

Gender differences in children's TV viewing patterns and exposure to food marketing

Observational studies show that boys are more exposed to food marketing than girls. Further, it was found that boys and girls have different favorite TV shows

The content of advertising. Food as a gendered category

The studies identified indicate that there is gender preference in the advertisement to children. Male characters are more present in food advertisements than girls.

Discussion

The narrative reviews revealed that although food advertisement is considered neutral in terms of gender, gender plays an important role in the development of marketing techniques: boys and girls react in a different way to different marketing techniques. Also, boys could be more affected by food marketing not only because they show greater exposure to food advertising but also because food advertisements usually are more male-oriented. However, these conclusions need further analysis. The male dominance in food industry advertising to children might be more a reflection of the cultural bias than an explicit decision made by food companies. Nevertheless, it is important to develop more research to understand the gender bias that may exist in food advertising to children, comparing different food categories and sub-groups.

The examination of the studies allows us to highlight certain methodological considerations when we analyzed food marketing from a gender perspective. First, it is extremely relevant to include confounders such a nutritional status and nutritional knowledge among others. Second, it is important to consider, mainly in experimental design, the type of stimuli that is shown in the experimental group. When the stimuli are designed certain aspects must be considered: gender bias, previous experience with the brand, TV show where that ad is included, etc. Third, the studies are quite heterogeneous in terms of the quality of the research. There is a lack of standardized definitions of certain concepts, such as persuasiveness, level of exposure, etc.

Finally, it is important to highlight that even if gender was included, there is no discussion of the results in gender terms. The differences found between boys and girls are not analyzed from a gender perspective, there is no a problematization of food marketing in terms of gender.

The narrative review was innovative and allows us to consider research questions from a gender perspective. Some aspects that would need further research are gender stereotypes in food advertising; differences by region in gender and food advertising to children; differences among children and adult population, etc.

A report with the results was developed and can be accessed at the following link:

https://drive.google.com/open?id=1KEfCOVQCB6DstJkSEUEmZwJdbY--qn-H

Specific Objective 2

To describe beliefs, attitudes, and perceptions of young boys and girls from different socio-economic sectors about food marketing strategies in Argentina.

Methodological design

A qualitative design was considered the most coherent with research activities. A recruiting agency selected focus group participants with a different socio-economic background. The interview guide was discussed among the research team. As suggested by the literature, visual devices were included to "trigger" the discussion inside the groups. We selected two unhealthy food advertising that used different marketing techniques and that target teenagers.

The focus groups were conducted by two researchers: the principal investigator and another researcher who was part of the research team. The communication team of FIC Argentina was also present in some of the groups. This aspect was highly relevant for the development of the visual material. Research notes were taken for all the researchers who were part of the group. These notes were discussed after the groups to assess methodological aspects (interview guide, the role of the researchers, etc) and to discuss the most relevant aspects that were learned from those groups.

All focus groups were recorded and transcribed "verbatim". The data analysis was conducted with the Atlas.ti software. The principal investigator read all the transcripts and developed a coding book. This book was discussed among all the research teams. The coding of the data was done by two different researchers. Dual coding was used in a sub-sample to increase the reliability of the findings. Differences in coding were discussed among researchers.

The study protocol was sent to the Ethics Committee at CEMIC (Centro de Educación Médica e Investigaciones Clínicas "Norberto Quirno"). More detailed information on this qualitative study protocol (in Spanish) can be found in the following link: https://drive.google.com/open?id=1A_mflw3Kz2f4V6qp92m_Z2oOOnlIGQLG.

Findings

We conducted 12 focus groups (n=96) with teenagers. Half of the groups were conducted with male participants (n=48) and the rest with female participants. Participants had different socio-economic backgrounds (32 with a high socio-economic level-32 with medium socio-economic level-32 with low economic level). Focus groups were homogeneous in their composition.

The main results of the project were:

- Susceptibility to advertising: the perception about how marketing persuasion affects their food choices is based on individual factors (self-efficacy to limit one´s consumption; the level of trust of their messages, etc.). Even if at an individual level they do not consider themselves to be

affected by food advertising, they consider teenagers and children as more “vulnerable” to food advertising. It is relevant to mention that some of them consider that food advertising affects them at an “unconscious level”.

-Different dimensions that are perceived to affect food choices and susceptibility to food advertising: a. Individual level: knowledge, attitude to advertising, economic resources, and personal medical history. b. Interpersonal level: the role of the family in food habits (family influence and household rules during childhood) and access to food (they agree that their food habits are still affected mainly by the food they eat at home), peers intake (they agree that when meeting with other teenagers they consume mainly unhealthy products) c. Environmental aspects: access to healthy food in school and the cost of healthy eating.

- Consumption of unhealthy products and health risks: adolescents do not perceive themselves as vulnerable to health risks. Even if adolescents identify “junk food” as food products that are bad for health, they consider that the consumption of these products (“once in a while”) does not affect them. Only those teenagers who were involved in sports activities were more prone to assess the impact of the diet on their daily activities.

- General perception of food advertising: teenagers consider that several food marketing advertisings are targeted to them. The use of specific language and images are recognized as marketing techniques that are used to target teenagers. Adolescents are exposed to unhealthy food and beverage marketing on traditional channels such as television and billboards but mainly on social media apps that originate from multiple sources including advertisements, user-generated and celebrity-generated content as well as food delivery apps. Teenagers recognize two different types of ads: the one that implied an engagement or interaction with social media food messages and the one that “disturbs” them. For the second type of advertisement, they develop different strategies to “skip” the ads.

- Food consumption and environmental aspects: many teenagers highlight environmental cues related to food habits and the need of changing the current diet to a vegan diet. Many teenagers seem to effectively engage with the environmental agenda. The consumption of unhealthy food products and food advertising is not perceived to be affected by this agenda.

-Food advertising and gender: teenage boys and girls report the same level of exposure to food advertising. Both groups agreed that food products are sometimes portrayed as gendered products, particularly low-fat products, and alcoholic beverages. They were critical of the use of stereotypes of men and women in food advertising.

Conclusion

The results of this research are coherent with previous literature that highlight the relevance of individual and environmental influences associated with unhealthy food consumption. Teenagers perceived food advertising as targeted to them and they recognize that most of the food advertisements that they receive belong to unhealthy food products. However, the high exposure to food marketing is considered part of the social context and, even in the cases where they accept that they may be influenced by food advertising, food marketing is not considered something problematic. Concerning this, there is a lack of perceived risk associated with the consumption of unhealthy food products.

The micro food environment is considered by teenagers as the most important one for developing food habits. Lack of access to healthy food in the school environment and social

norms regarding food at home are considered as relevant dimensions for explaining food habits. The macro food environment including government policies and cultural aspects are not considered in their discourse about the reason for choosing certain food. The selection of food products is in some cases affected by social pressure.

One particularly interesting aspect was the fact that even if teenagers did not seem to be motivated for changing their dietary patterns (only those who play sports) they showed ethical motivations, as concern for animal welfare and environmental protection, for changing their diet to a vegan diet. Diet changes were more associated with moral concerns than with individual motivations.

The results of this research showed that advertising susceptibility is a complex phenomenon and social desirability bias should be considered when analyzing this aspect. In a context where high exposure to unhealthy food marketing is not considered problematic, advertising susceptibility is an aspect not usually recognized in teenagers´ discourse. Future research should analyze the exposure to digital marketing and describe the extent to which teenagers interact and engage with food messages.

The full report with research findings is in the following link: https://drive.google.com/file/d/1YFm3p9WJGWxyRhL8DQfMBiIP7SlmyiiR/view?usp=sharing

Bolivia

The Inter-American Heart Foundation (FIC) conducted this project in Bolivia using the protocols and tools that were developed previously by the InterAmerican Heart Foundation of Argentina. The results of the research process are presented in detail below for each objective of the project.

Specific Objective 3

To analyze the regulatory framework for food advertising aimed at girls, boys, and adolescents in Bolivia.

An analysis of the regulatory and legal framework in Bolivia related to the advertising of food aimed at children and adolescents was carried out. The activities that we developed to achieve this aim were the following:

- A comparative analysis of the regulations was carried out across countries of the region, including the regulatory framework of Brazil, Argentina, Uruguay, Peru, Chile, Mexico, Ecuador, Venezuela, Colombia, Paraguay, and Costa Rica.
- A total of 32 interviews were made in the departments of La Paz, Cochabamba, and Santa Cruz, including representatives from public institutions, private institutions, cooperation agencies, and civil society organizations. This number of interviews was greater than planned because we had to expand the number of interviews due to the initially identified actors' lack of knowledge of the subject, the unique and innovative character of the research, and the need to involve other institutions who are a key factor in this process.
- During the interview process with key stakeholders, we made efforts to interview members of the advertising industry, but efforts made were not successful.

Findings

- The following legislation has been identified, reviewed, and analyzed in depth: Political Constitution of the Plurinational State of Bolivia; Law No. 775; Law No. 622; Law No. 070 "Avelino Sinani Elizardo Pérez"; Law No. 453 Rights of Users and Consumers; and Supreme Decree No. 28667. However, to date, these laws are not yet complemented by their respective regulations, which makes their enforcement un-viable.
- In Bolivia, there is no legal regulation that regulates or restricts the marketing of food is enforced. This legal vacuum is being widely used by the food industry to promote its products indiscriminately.
- Law 453 on the Rights of Users and Consumers refers to misleading advertising and abusive publicity. Nonetheless, it does not make specific references to food advertising.
- International jurisprudence and relevant experiences of countries in the region (Brazil, Chile, Mexico, and Ecuador) in enforcing regulations on food advertising were identified.
- Bolivia is one of the countries in the region with limited regulation regarding healthy eating, food marketing, and advertising, and it does not have legal norms that focus on the prevention of NCDs.
- The public institutions that, according to law, are in charge of regulating food advertising were identified: Ministry of Health and Vice Ministry of Defense of Users and Consumers. Nonetheless, due to the regulatory gap, they are unable to take action on this issue.
- There is scientific evidence developed by international organizations -mainly by United Nations agencies- on the relationship between exposure to food advertising and obesity/overweight in children and teenagers. These organizations have also formulated specific recommendations for the State to include in its regulations. Nonetheless, no technical or financial assistance program or project specifically designed to promote this issue has been identified in Bolivia.
- The participation of the organized civil society is low. In Bolivia, there is no presence of non-governmental organizations working around the protection of consumers from the effects of food marketing.
- Public institutions' knowledge about the influence of food marketing on the nutritional status of Bolivians is poor.
- Three different categories of relevant actors were identified: public institutions, international cooperation agencies, and civil society organizations.
- At the local level, there is no scientific evidence on the effects of food advertising directed at children and teenagers. However, there is interest from key institutions in FIC Bolivia guiding this process.
- The framework law of the Latin Parliament on "The regulation of advertising and promotion of foods and non-alcoholic beverages aimed at children and teenagers" was considered as a regional normative reference, in addition to MERCOSUR regulations, OMS/OPS and, others.
- Based on the research, FIC Bolivia promoted the creation of a Committee to monitor and accompany the process, with the participation of public institutions, international cooperation agencies, organized civil society, and universities. This Committee constitutes a good opportunity for debate, analysis, and political incidence on the subject.

A report with the results was developed and can be accessed in the following link:

https://www.dropbox.com/s/p6ek0bzaz3tlzmo/informe%20objetivo%201%20FIC.pdf?dl=0

And the annexes of the report can be found at the following link:

https://www.dropbox.com/sh/sic1srfpqf4wtiv/AAB95md6PnAa4jC853E3QBIRa?dl=0

Specific Objective 4

To determine the frequency of appearance and characteristics of food advertising for children in traditional and alternative media.

The following activities were carried out:

- We developed a list of television channels with the highest ratings.
- Open signal channels (Unitel, PAT, Bolivision, ATB, and Red Uno) and cable television channels (Nickelodeon, Disney Channel, Cartoon Network, and MTV) were monitored, focusing on the presence of television commercials where food and non-alcoholic drinks were mentioned. Three moments for channel monitoring were defined: From April 7th to 15th 2019 (the week was chosen because Bolivia celebrates Children´s Day); from July 8th to 14th 2019 (Bolivian winter and school vacation for primary and secondary school); and, from December 21st to 27th 2019 (week chose for Christmas holidays).
- The television and radio channels with the highest rating were determined, based on current and public data.
- The transcription of the data and the respective analysis of the same were carried out in the SPSS program.

Findings

- In the three monitoring periods where television channels were monitored, it was evidenced that food advertising, both in television commercials and mentions within programs, varied according to the time of year.
- 70% of advertising can be found as television commercials and 30% through direct mentions made in television programs by hosts.
- Advertising is segmented by time: in the morning, during cooking programs -apparently aimed at adults- soft drinks, meats, canned goods, water, milk, and cookies are advertised. In the evening hours, advertising is more aimed at children, adolescents, and young people. The products advertised are mainly soft drinks, cereals, and malt-based beverages.
- In general, advertising aimed at adults is related to exercise and well-being, the natural components of the products, and healthy habits.
- Advertising aimed at girls, boys, adolescents, and young people, is related to vitality, youth, strength, sport. Young characters are used to highlight such characteristics.
- Industry strategies for advertising are varied, ranging from the use of generic international spots (mainly in soft drinks) to the use of animations (in cereals).
- 25% of advertising uses public figures or celebrities to promote food.
- The average time duration of television commercials is 20 seconds (minimum of 0.8 seconds, maximum of 30 seconds).

A report with the results was developed and can be accessed in the following link:

https://www.dropbox.com/s/0jlwa5epbxktgoc/informe%20objetivo%202%20FIC.pdf?dl=0

Specific Objective 5

To determine the quality and nutritional content of the foods advertised in traditional and alternative media, aimed at children.

- After media monitoring had been completed (April, July, and December 2019), data collection for the nutritional analysis of the products announced in commercials was carried out.
- The instrument for the nutritional analysis of selected foods in media provided by the FIC Argentina team was reviewed and adapted.
- Identification and acquisition of the selected food products were made. Then, nutritional tags and health claims of each product were extracted.
- During January 2020, the pilot study of the nutritional analysis of foods advertised in the media of La Paz, Santa Cruz, and Cochabamba was carried out.
- The nutritional analysis of the food products and non-alcoholic sugary beverages was developed according to the PAHO nutrient profile, 2016. This model establishes the highest limits of sugar, salt, trans-fatty acids that food products and drinks should contain.

Findings

- A total of 11 categories of ultra-processed food products and sugary drinks were identified in television programming targeted to kids: soda (23%); concentrated juices, sweetened juices and fruity drinks (18%); sausages and seasonings (13%); pies, cakes, and desserts (10%); candies (5%); ready-to-heat food (5%); energy bars and snack bars (3%); sweetened milk and milk powder with flavoring (3%); canned soup and instant soup (3%); and imported products (3%).
- Of total food publications (57 food products), 66% of the food shown during television programming has a low nutritive value according to the PAHO nutrient profile.
- Sodas exceeded the parameters established for sugar content in a serving portion of 200ml. Cereals exceed sugar and sodium content in a portion of 20 grams. Seasonings have a high content of sodium, total fat, and saturated fat in a portion of 10 grams.
- The nutritional quality analysis shows that the vast majority of food analyzed (66%) does not comply with the nutritional requirements to be advertised according to the nutrient profile used (it has a low nutritional value). This matches the scientific evidence that points to the fact that food advertisements targeted to children are of low nutritional value and differ radically from the current recommendations about healthy food habits.
- The analysis shows that the format used to present nutritional information varies widely among food products. For example, nutritional information is shown in some cases taking as reference grams or milligrams as a measure. Furthermore, there are differences in how the nutritional information is calculated: some calculations take as a base a quantity of 100 grams, and others calculate per portion. Others calculate nutritional information taking both measures as a base.
- Finally, the study identified that in 20% of the food products analyzed, some show statements of healthy nutritional properties like “B12, B6, and C Vitamin added” “without preservatives”; “without cholesterol”. However, these statements might be misleading in some cases, as they do not match with the nutritional tag.

A report with the results was developed and can be accessed in the following link:

https://www.dropbox.com/s/xy0iwr0dtkhh6p0/informe%20objetivo%203%20FIC.pdf?dl=0

And the annexes of the report can be found at the following link:

https://www.dropbox.com/sh/9bbesq89s679y3o/AAC3SO4iKDE7AMI2sAAPtckHa?dl=0

Specific Objective 6

To analyze the impact and influence of food advertising aimed at children, through a study of perceptions about eating behavior and beliefs in parents and heads of families in different socioeconomic strata.

We conducted the following activities:

- The question guide elaborated by FIC Argentina was adapted and contextualized. This data collection tool was originally elaborated for the conduction of focus groups but, due to the health restrictions imposed in the context of the COVID-19 pandemic, we decided to adapt the guide foe telephone interviews with parents, caregivers, and teenagers, from the cities of La Paz, Cochabamba, Santa Cruz, and El Alto.
- Participants in the study were selected based on research made by FIC Bolivia previously, named "Nutrition, physical activity and exposure to television advertisement in times of COVID-19".[2] We gathered a total sample of 32 participants.
- Informed consent was prepared and disseminated among participants using Google Forms. This informed consent was revised by members of the consortium to fit with the purposes of open data sharing (for example, information about the treatment of data was added in the consent form).
- The 32 interviews were made using the telephone. Of the total sample, 50% were professionals and 50% nonprofessionals; 60% women and 40% men.
- Transcriptions of the interviews were made to carry analysis. The analysis was developed using the computer-assisted qualitative analysis software Atlas.ti.

Findings

- 80% of the total sample of parents interviewed prefer that their children watch television during the day.
- 40% of the interviewees have referred to having cable television at home.
- 70% of the interviewees mentioned that they control what their children watch on TV.
- 60% of the interviewees mentioned that their children demand food products that they see on TV, such as sodas, cookies, cereals, cakes; 40% of the remaining sample mentioned that their children demand ultra-processed food (fast food) or candies, that are advertised through other media (direct advertising or billboard); related comments are shown next:

[2] Please find the report here: https://www.dropbox.com/s/yvf5gyj49gt7585/Informe%20alimentacion%20y%20cuarentena%20final.pdf?dl=0

- "Normally, my daughter watches TV in the afternoons, TV programs like CALLE 7… she is a fan of one of the contestants of that program..." *(Interview with a nonprofessional family mother with a 13-year-old daughter from Santa Cruz city).*
- "My son asks me to buy him stuff like Coke or cereals that he watches on TV… he also asks me to buy him Copacabana chicken some weekends, however, he has not seen it on TV, he knows about this because we go to eat there…" *(Interview with a professional father with a 10 years old son from La Paz city).*

- Parents who have a lower education level are the ones who have less control over their children about when and what they watch on the television:

  - "… I go to the market to sell very early in the morning and sometimes I arrive home at 19:00 or 20:00… my child stays with his siblings during the day, he does his homework, eats, plays and watches TV…" *(Interview with a nonprofessional mother with an 8-year-old son from El Alto city)*

  - "…Her mother and I try to be always attentive of what she (daughter) watches, we try to keep a schedule for games, homework and for watching TV… She prefers watching cable TV, youth games or movies…" *(Interview with a family professional father, with a 13-year-old daughter from La Paz city)*

A report with the results was developed and can be accessed in the following link:

https://www.dropbox.com/s/5vx6y3dkqbwyogn/informe%20objetivo%204%20FIC.pdf?dl=0

And the annexes of the report can be found at the following link:

https://www.dropbox.com/sh/cvygbz0xoicyk6q/AAC9GJGrhBQhKF4IvCCaFUdca?dl=0

Perú

We fulfilled all the activities related to specific objectives 7 and 8. We have not modified or added any research objectives for Peru. In the next paragraph, we present a summary of the findings, which would be further detailed in the subsections for each study.

Specific Objective 7

To identify and characterize the family factors influencing children's decisions to purchase unhealthy foods in addition to the influence of food advertising.

We conducted a qualitative study to achieve this objective. We observed parents, children, and adolescents of one public and one private school during one week at three different times of the day: at the entrance, lunch breaks, and exit times of the schools. We also interviewed 44 caregivers (22 for the public school and 22 for the private school): two for each grade, one being a caregiver of a male student, and the other, of a female student. We analyzed the observational and interview data and integrate our findings as follows.

In this study, we found that the factors that influence children and adolescents' food purchase and consumption are mainly the access to the physical environments where food is purchased and consumed (at school, at home, or outside the home); the children and adolescents' agency and access to money; parental influence (related to household roles, individual preferences,

eating strategies, health notions and health concerns); peer influence; and the institutional arrangements at school (formal and informal rules and strategies applied by teachers and school personnel regarding food consumption). Furthermore, we identified a limited number of mentions regarding the influence of the media, food marketing and advertising campaigns, and the national and international institutional arrangements around food and eating (rules and regulations imposed by the states or by the international community).

Some of the factors mentioned affect differently the population under study depending on their gender, age group, and type of school they belong to (private/public), like the access to the physical environment, agency and access to money, parental influence, and peer influence. For instance, we found out that public school children access the food environment outside the school more often than the students in the private education system and the teenagers from the same school. Nonetheless, the agency children have to access this food environment is low, because parents are mediators, and children cannot buy from the street food vendors independently.

Moreover, we have observed that in the private and the public schools, male children and adolescents interact more with the food environment inside the school (kiosks, cafeterias, and spaces allowed for food consumption) and are more visible than female students of all ages. The fact that male students are often seen buying from the school kiosks or cafeterias shows that they might have more agency than women to buy food, which could be related to resource availability or other gender normative beliefs and practices regarding food and eating that need to be further explored.

Additionally, we have identified that parents and families from private schools seem to access a greater variety of food establishments for either purchase or consumption. This is related to the availability of economic resources which, in turn, may influence children and adolescents' preferences and decision-making regarding food consumption, since families are used to accessing more expensive food, considered more exclusive (like international or gourmet food) or trendy (like maki-rolls and organic food supplies). Thus, food becomes a marker of social status.

Peer influence has also been identified as an important factor, mainly within the school setting. We observed differences between schools and age groups regarding this factor. For instance, we observed that children from public and private schools have to eat inside the classrooms, with the teacher being present, and this limits the opportunities to influence each other's food consumption, unlike adolescents, who make use of other spaces to eat without adult supervision (mainly in the case of the private school). However, some common practices to influence each other's food consumption have been identified, such as talking about individual preferences to convince others to buy certain food products, exchanging/sharing food brought from home, and contributing with money to buy food in groups. We have observed that students, of both private and public schools, generally share prepared food or unpacked products that often contain processed meats, are high in sugar and carbohydrates, or are deep-fried.

Parental influence is particularly relevant in children's and adolescents' food consumption at the school and at home. This influence usually depends on the gendered roles that mothers and fathers adopt in the nutrition of their children. For example, we found that because mothers or other female caregivers (like grandmothers) are usually in charge of purchasing, planning, and preparing what their families will eat, they tend to be stricter than the fathers and

control what their children eat through different strategies (rules, prohibitions, limitations, negotiations, and punishments). In contrast, because fathers are less involved with these activities, they tend to assume a more relaxed role, allowing their children to eat what and how they want, even if there are established rules regarding the consumption of certain foods at home.

Other factors related to parental influence are individual preferences, health considerations, and notions about healthy eating. For instance, we observed parents of the public school sharing street food, purchased outside the school, with their children in primary school. This food is usually not packaged, prepared "at the moment" and usually not considered as healthy because it might contain processed meats and carbohydrates, it is deep-fried or it is even made with supplies that are not fresh or have good quality. Nevertheless, by sharing these products with their kids, they influence their tastes and notions regarding what they can and cannot eat.

On the other hand, we have discovered that, in many cases, **parents' notions about healthy eating are related to a pre-existent health condition that they or any other member of the family has, particularly among public school parents.** These health considerations have led them to change their food choices, the availability of food at home, and the way food is prepared. For instance, they might mention the use of fresher products, particularly vegetables, in their meals, and the elimination of packaged or bottled products, like soda, from family nutrition. Again, this could influence children's conceptions of what is healthy and unhealthy, as well as their choices to purchase some packaged products.

Another factor that we have identified is the implementation of nutrition talks and flyers targeted to school parents, both in the private and public schools, but mostly in the latter, as this was part of a national policy to promote healthy food consumption in the family. However, only a few mothers from the public school mentioned going to some of the talks recalled receiving the flyers and using the information for preparing meals. Most of them either knew of the program, but had never been to a talk, or did not know of the existence of the program at all.

We have identified that **the media, food marketing and advertising, and the national and international regulations have a limited impact on the parents, which might influence food consumption at home.** Some mentions have been captured regarding radio, television, and the internet as sources that allow parents to get information about healthy eating, the preparation of meals, the quality of certain food products, unhealthy products, and consumer rights related to the food industry malpractices. However, one aspect that is worth noting is the importance parents give to information about unhealthy foods found through social media and instant messaging apps, as most of the time, it does not have any scientific backup. **Regarding food marketing and advertising campaigns, only a few parents named them as factors that have influenced their families' food consumption. Nevertheless, many remembered brand names and reported being faithful to certain food brands, which they associated with quality, this happening particularly among private school parents.**

On the other hand, we have identified that the **knowledge parents of the private and public schools have about their rights as food consumers, protected under national and international laws and regulations, tends to be imprecise, vague, or even incorrect**. This indicates that information campaigns regarding this subject are either ineffective or nonexistent and that further efforts should be made if state officials want to influence food consumption within the household.

Specific Objective 8

To design, implement and evaluate a media literacy intervention that will empower children and adolescents to mitigate the persuasive effects of food advertising outside the school settings

We concluded the activities related to Specific Objective 8. While this study was planned to be completed in the first year of the project, we changed the schedule due to the calendar of the Peruvian schools. Data collection of the study concluded in late July 2019, data systematization was carried in August 2019, and data analysis took place during September – December 2019. A write-up of the study manuscript is underway.

The protocol for this study was approved by the Universidad de Lima's ethics committee. We recruited three schools in total—i.e., one private and two public schools. The media literacy intervention was implemented in the private school and also randomly in one of the public schools (with the other public school being assigned to the control condition).

The materials for the intervention and control condition can be found here:

https://www.dropbox.com/sh/gvfyynx0kigmg1t/AADFA1ExPbLP_fWnGyDTgIKpa?dl=0

In order to identify if there were any changes in children and adolescents motivated by the intervention, the students of the three schools responded to the same survey before the intervention started, and once the intervention concluded. This survey included items that measured attitudes and intentions to eat unhealthy foods, as well as those that measured conceptual and attitudinal advertising literacy.

A synthesis of the study can be found next along with a poster presented at the Kentucky Conference on Health Communication, held on April 2-4, 2020.

Synthesis

Title: Assessing the effect of an advertising literacy intervention in Peruvian schools

Because childhood obesity is a growing problem in Peru, children need to learn about the influence of food advertising, which tends to promote unhealthy products in Peru (Busse, 2018). Drawing on the conceptualization of advertising literacy –which involves conceptual advertising knowledge, attitudinal advertising literacy, and advertising literacy performance (Rozendaal, Lapierre, Van Reijmersdal & Buijzen, 2011; Rozendaal, Opree & Buijzen, 2016)— and following a prior curriculum guided by this conceptualization (Nelson, 2015), we developed, implemented and tested the effect of an intervention aiming to empower children to mitigate the effect of food advertising in the context of Peru. An intervention was designed to develop the three dimensions of advertising literacy over four half-hour sessions. In the two intervention schools, experts trained teachers who, in turn, delivered the intervention to their students in the classroom over one month. Teachers in the control school received a dossier with information about food advertising in Peru and the national law regarding the promotion of healthy eating among children and adolescents. The evaluation followed a pre-post design for elementary students (two intervention schools; no comparison school) and a randomized control trial with two arms (two intervention schools; one comparison school) with pre-post measures for high-school students. The study took place between April and July 2019. Overall, results showed null effects on several of the outcome measures. Yet for elementary students, the intervention influenced items related to attitudes towards eating unhealthy foods and "Skepticism toward

advertising" while, for high-school students, items related to "Understanding selling intent" and "Understanding persuasive intent." This paper discusses both the design and implementation process as well as the results of the evaluation of this intervention in the context of a low-and-middle-income country such as Peru.

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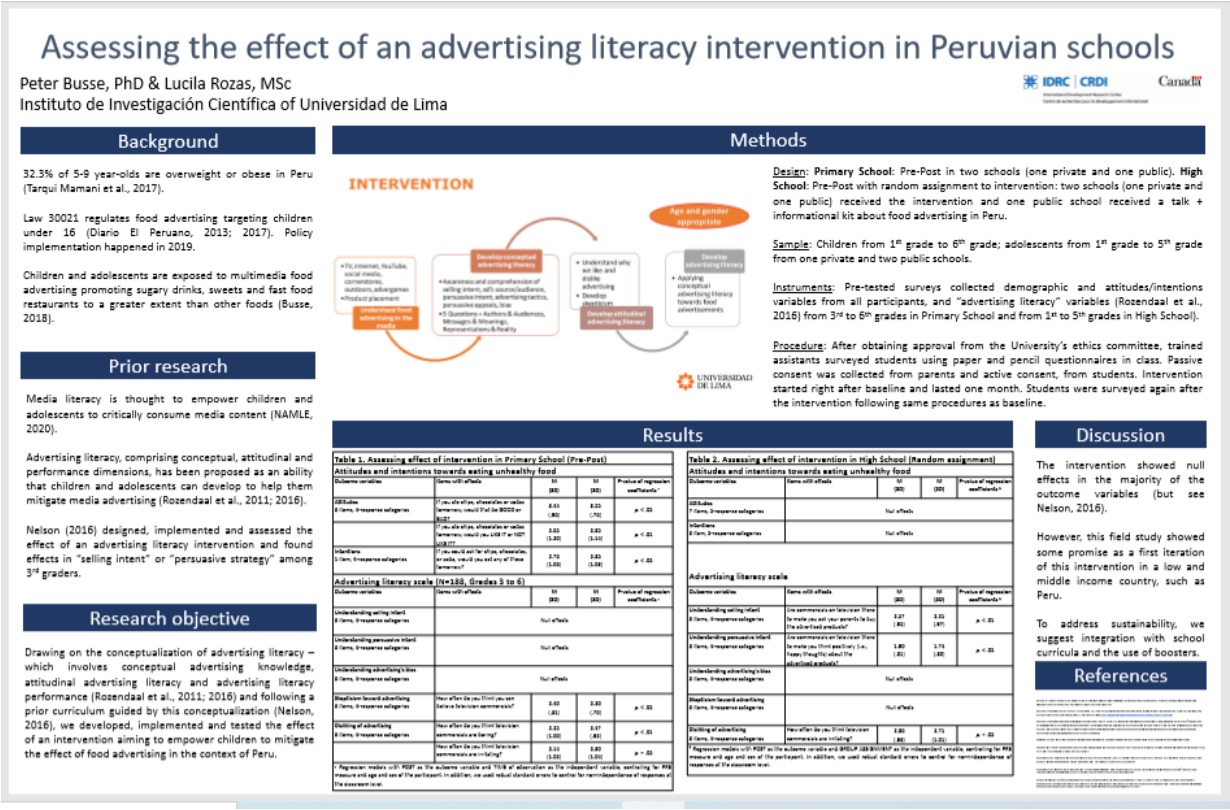
The porter presentation can be seen next:



Note. Poster presented at the Kentucky Conference on Health Communication, virtual conference held on April 2-4, 2020

Guatemala and Peru

Specific objective 9

To assess the representation of gender in food and beverage advertising in bodegas around public schools.

For this shared objective between Guatemala and Peru, 100 advertising ads were analyzed per country to assess the representation of gender. The 200 ads were evaluated and analyzed by DUO, a marketing agency.

We first discussed what food products and beverages would be included in the evaluation of the advertisement. This discussion was based on two previous research projects that evaluated different aspects of child-oriented advertisement: ¨Analysis of advertising in the multimedia environment of children and adolescents in Peru¨ conducted by Peter Busse and ¨Child-oriented marketing techniques in snack food packages in Guatemala¨ conducted by Joaquín Barnoya. Both studies categorize food products and beverages, we selected 9 categories and excluded meat, bread/pasta/rice, fruit and vegetables, sauces, and pizza fast-food restaurants.

Guided by prior research (Violeta Chacon et al., 2013; Gallo et al., 2014; Tester et al., 2011), four areas of 400m-radius around public and private schools were selected in Lima and Guatemala City. Research assistants visited each one and marked all corner stores on a map with the aid of mobile phones and a Global Positioning System (GPS) device. Based on food and beverage categories commonly advertised in corner stores (Busse, 2018; Violeta Chacon et al., 2013), we trained research assistants to take individual pictures of each food and beverage print advertisement in the selected corner stores. A priori, we decided to collect photographs of 100 print ads in each city, which resulted in a total sample of 200 photographs of unique print ads.

For the analysis of gender representation in print ads, a marketing consultancy firm from Guatemala (DUO Marcas) was hired, due to their expertise in advertising and graphic design. In addition, our team in Guatemala has previous experience working with this firm (V. Chacon et al., 2018). This analysis was guided and revised by the researchers: First, the research team and DUO Publicidad discussed a preliminary version of the coding instrument—DUO Publicidad identified variables for the analysis based on their expertise around gender advertising. Additional variables were proposed by the research team considering previous studies on gender and tobacco advertising. (Bansal et al., 2005; Childs & Maher, 2003; Matthes et al., 2016; Toll & Ling, 2005) The final instrument included 17 variables to assess the gender representation of food and beverage print advertisements (Table 1). Furthermore, two other general information variables (country of provenance and school segment) were included in the final quantitative database. Thus, a total of 19 variables were used to record information about the food and beverage print ads.

Table 1: Data collection Instrument for gender orientation in printed media

Variable	Definition
Brand	Name or symbol on a product that shows that it was made by a particular company and that it cannot be used by other companies without permission (ie, Cheerios, a brand of General Mills, iPhone, a brand of Apple).
Product category	- **Eggs and dairy** - **Cereal** - **Bread and pastry** - **Salty snacks**

	- **Instant-prepared food or frozen food** - **Candy** - **Sugar-sweetened beverages** - **Water** - **Ice cream**
General communication concept	Describe what kind of message the graphic piece seeks to transmit in general. For example: promote X products with people who play sports and seek to improve their health and physical appearance.
Color	Background color or more frequent color that is used in the ad. What does the color transmit in the context of the poster?
Product representation	Graphic representation of the product on the poster, analyze if the design of the package is gender oriented. If the shape of the container or label shows gender representation, for example, the photograph of a man or a woman.
Environment/ activity featured	Environment or scenario represented on the poster: school, home, work, beach, gym, etc. What the environment/scenario says in terms of gender For example: a. track with formula 1 cars (focused on adventurous men) b. catwalk with a fashion show (oriented to modern women) c. stage of an electronic music concert (aimed at social and energetic men and women)
Number and gender of the persons shown in the ad	Describe the number of persons shown in the ad and their gender
Health claim	A **"health claim**" by definition has two essential components: (1) a substance (whether a food, food component or dietary ingredient) and (2) a disease or health-related condition, (for example, "adequate calcium throughout life may reduce the risk of osteoporosis"). It can also be represented as a health-related endorsement from a national or international professional health association (I.e., a pediatric association of Guatemala). **Nutrient content claims** describe the level of a nutrient in the product, using terms such as free, high, and low, or they compare the level of a nutrient in a food to that of another food, using terms such as more, reduced, and lite. **Structure/function claims** may describe the role of a nutrient or dietary ingredient intended to affect the normal structure or function of the human body, for example, "calcium builds strong bones." Also, they may characterize how a nutrient or dietary ingredient acts to maintain such structure or function, for example, "fiber maintains bowel regularity," or "antioxidants maintain cell integrity." General well-being claims describe general well-being from consumption of a nutrient or dietary ingredient Evaluate if the health claim gender oriented.
Values/emotional appeal	Something (such as a principle or quality) intrinsically valuable or desirable. Ideas suggesting improvement/ approval: beauty, relaxation, women's liberation, scape, success, wealth, independence, self-confidence, freedom, adventure
Gender of the main character	Gender of the character or person that is the center of attention
Role model/ public figure	Describe if there is a public figure or role model in the ad and evaluate if it is oriented to males, females, or both.
Public to which it is visually directed	Gender to which the general design of the poster belongs in visual terms with a clarification of the reason for the gender
Focal point	Describe the area of greatest interest, where attention is focused. It can be a color, a shape, a typeface, or any other element that stands out from the rest and is the center of greatest interest.
Typography	Define the typography style according to gender For example, it is predominantly masculine typography, with thick strokes, it transmits strength and solidity.
Scales	Explain if there is a set of sizes across the different design elements and how it affects according to gender. For example, the male character is placed relatively larger than the woman to give it greater prominence.
Shapes	Describe the type of shapes that predominate in design and relate them to gender. For example, the package shows wavy and soft shapes that in appearance represent feminine curves.

Contrast	Explain if there are different design elements (big and small, light, and dark) to create visual interest. Example: The female character looks brighter and more radiant compared to the male character who is not in a very bright position.

Findings:

Sugar-sweetened beverages (SSB) was the category most commonly advertised overall (51%), showing a higher percentage in Guatemala (61%) than Peru (41%). Of the total number of SSB print ads, 25% were for energy drinks. In contrast, print ads for water were rare in the sample, with only 12% in Peru and 4% in Guatemala (see Table 2).

Table 2. Product category in the 200 evaluated ads from Guatemala and Perú n=200

	n	%
Sugar sweetened beverages	102	51
Candy	20	10
Dairy	19	9.5
Water	16	8
Salty Snacks	13	6.5
Ice cream	10	5
Bread and pastry	9	4.5
Instant prepared food	4	2
Cereals	3	1.5
Others	4	2

The analysis showed that 20% of the total sample of 200 advertisements (100 for each country) exhibited some gender orientation, which was assigned to at least one of the following variables: number and gender of the persons shown in the ad, gender of the main character, product representation and the public to which the ad is visually oriented.

For the variable "number and gender of persons in the ad", ads with no persons displayed (77% in Guatemala and 81% from Peru) were classified as neutral, whereas ads with female orientation (ads showing women predominantly) were 10% in both cities. Male targeted ads for this variable were more frequently found in Guatemala (13%) than Peru (9%) (Table 3).

Table 3. Gender representation results, comparison by country*

Variable	**Neutral**		**Female**		**Male**	
	Guatemala n=100	Perú n=100	Guatemala n=100	Perú n=100	Guatemala n=100	Perú n= 100

Product representation	78	87	2	5	20	8
Number and gender of the persons shown in the ad	77	81	10	10	13	9
Gender of the main character	52	74	12	12	36	14
Public to which the ad is visually oriented	60	70	13	13	27	17

*Cell numbers indicate frequencies and percentages by country.

A total of 48% of advertisements from Guatemala and 26% from Peru presented a main character that was either animated (i.e. a cartoon character) or a person. Therefore, the variable "gender of main character" was assessed for these ads. Results show that male orientation for this variable was also greater for Guatemala (36%) compared to Perú (14%), whereas female orientation was equal in both cities (Table 3).

The use of animated characters was found in over a quarter of the ads (28%) in Guatemala, most of which were male-oriented (22 of 28 ads). Of these, 8 ads made use of spokes characters whose gender is already assigned. In the other cases (20 ads), male representation was assigned because the character displayed features considered to be typically male, such as clothing, activities (i.e. male-dominated sports), physical characteristics, and personality (strength, attitude). Peru depicted animated characters less frequently (9 of the 26 ads).

In Peru, the use of human characters was 17% and 20% in Guatemala. Male characters, usually athletes, appeared in energy drink ads, followed by other SSB (i.e. sodas), and were displayed most frequently in sports-related activities. Female main characters were commonly shown displaying or consuming the featured product, usually SSB (i.e. sodas, powdered drinks) or other types of products (yogurt, milk, oatmeal, bottled tea) and in outdoors contexts. In Peru, only two ads displayed women doing sports and in the workplace. Celebrities (famous actors or athletes) as main characters were found in nine ads in Guatemala (5 were male). In Peru, only four ads displayed celebrities as main characters, all of whom were males.

Graphic elements (e.g., character portrayal, typography, setting, color, scale) were used to assess the gender orientation of the variables "product representation" and "public to which the ad is visually oriented". Regarding product representation, 20% in Guatemala and 8% in Peru were male-oriented, whereas female-oriented ads were 2% and 5% in each country respectively.

The visual orientation of the ads was male-oriented in 27% of the ads in Guatemala and 17% for Peru, while female orientation was the same in each country (Table 3). In the male-oriented ads, the character (human or animated) was depicted both in a photograph in the ad and in the package of the product. In contrast to female-oriented ads, male-oriented ads were typically coupled with typographies, colors, and design elements that supported the concept of male gender representation due to their associated characteristics to men (i.e. bold, rudeness, sharp). In female-oriented ads, women were frequently shown holding or consuming the product.

Guatemala

Specific objective 10

To determine the strategies used by the food and beverage industry to deliver product and place point-of-sale (POS) advertising in corner stores.

For this objective conducted 30 interviews with store proprietors. The main finding is that proprietors and distributors develop a companionship where they negotiate promotions, information, product placement, stocking, and POS advertisement. Some proprietors in Guatemala see unlikely to promote the consumption of healthy products; we believe that healthcare policymakers must design, plan, and regulate food environments from UPF based on this relationship of proprietor and distributor.

Context and study design

This is an exploratory qualitative study of corner store proprietors in Guatemala, their relationships with food and beverage industry representatives or distributors, and the decisions around POS advertisements. Although there is no consensus definition of corner stores, Ayala (2017) defines them as "conveniently located to one's home, school and/or workplace and with sufficient product varieties to complete a fill-in or quick, single meal shopping trip" (p.2). In Guatemala, these are typically small, single-owner establishments, often located as a store-front within the primary residence or shared space with another business (e.g., parking lot, repair shop). Linguistically, in Guatemalan Spanish, they are known as *tiendas* (corner stores) whereas larger grocery stores are called *bodegas*, *despensas*, or *supermercados.* Therefore, this study was restricted only to *corner stores.*

Given our existing data on the importance of corner stores as a site for UPF purchasing in both urban and rural and indigenous and non-indigenous communities, we conducted this study in two locations. As an urban site, we chose Zone 1 of the capital city, Guatemala City (population of 46, 215 inhabitants, 91% non-indigenous). This site was chosen because it is a typical middle-income neighborhood, characterized by petty commerce and large-scale in-migration from all over Guatemala. Zone 1 is also the political, cultural, and historic center of the City.

As a rural site, we chose Chisec, in the northern province of Alta Verapaz, which is mainly an agricultural community that grows maize, cardamom, and African palm. The municipality center has 10,146 inhabitants, mostly Q'eqchi' Maya (88%). Chisec is similar to other rural, indigenous communities where the presence of UPF is rapidly increasing. In addition, our team has previous experience working with this community and one of the authors (A.C.) is fluent in Q'eqchi' language, facilitating fieldwork.

Participant Selection

Stores were purposively selected based on two criteria. First, as crime rates in both sites are significant, areas with known safety concerns were avoided. Second, this study is part of a larger one to understand the food environment around public elementary and secondary schools. Therefore, stores located within walking distance (5-10 min) of schools were preferentially invited. A sample size of 15 interviews in each community was planned, based on the team's

prior experience researching similar topics with store proprietors in other communities, where thematic saturation was reached after 10-15 interviews.

Store proprietors were sequentially invited face-to-face to participate. When the store owner was not available at the time of the team's visit, the next store was approached until the desired sample size was obtained. In the Zone 1 site, 151 stores were approached and 136 refused to participate. In Chisec, 20 were invited and 5 refused. The main reasons for refusal were safety (stores are frequently vandalized by gangs and were suspicious of unknown persons asking questions) and time constraints. All interviews were conducted at the store during normal business hours in Spanish. Every time a customer showed up, the interview was paused and then resumed.

Interview Process

We developed an interview guide with seven sections: (1) general store information; (2) store history and organization; (3) approach by the food and beverage industry; (4) how POS advertising is placed; (5) financial relationship with the industry; (6) perceived advertising effects on consumption (7) corner stores influence on dietary behaviors. The guide was based on a literature review and developed in collaboration with others who have previously worked with stores in Guatemala and Perú. The interview was pilot tested and revised in collaboration with one store owner. After obtaining consent, all interviews were audio-recorded.

All interviews were conducted by A.C., an anthropologist with a master's degree in Local Comparative Development Studies. No members of the team had any prior relationship with the participants. Signed informed consent explaining objectives of the study, voluntary participation, confidentiality, and anonymity was obtained from all participants. The study's protocol, informed consent, and interview guide were approved by the Comité de Ética, Facultad de Medicina, Universidad Francisco Marroquín, Hospital Universitario Esperanza, Guatemala, C.A. (CE/FM-UFM003-19). During the interviews, field notes were taken and included information such as stores'-built environment, the number of customers purchasing, or interaction between proprietor and distributor. Field notes are used to complement the information. Interviews lasted between 25-60 minutes and were subsequently transcribed verbatim by an advanced anthropologist student from the Del Valle University. Transcripts were not returned to participants. In total, we interviewed 15 store proprietors in each site.

Coding process

We coded the interviews with Dedoose qualitative software using an inductive analysis approach. AC coded all 30 transcripts to develop the initial codebook with 72 codes. JB, SM, and AC discussed the relative code frequencies that were reduced to 28 codes. After developing the final codebook, all transcripts were double-coded by the anthropology student and AC. Then, we calculated a kappa score of 0.71, which is categorized as a "good", "moderate" or "substantial" agreement in social science research (McHugh, 2012). Themes emerging from the clustering of codes were discussed with the research team. Quotations are identified by respondents' gender, age, and site (urban or rural). Participants did not provide feedback on the findings. We reached theoretical data saturation at the end of the coding process since participants' responses were not providing any new data or variation.

Results

Qualitative themes were clustered around motivations and origins of corner store proprietorship; advertising strategies and product placement; the influence of advertising on consumers' choices; relationships between distributors and store proprietors; and perceived role in promoting healthy choices. These themes are discussed below.

Profile of corner stores and participants

Corner stores and their proprietors are ubiquitous in Guatemalan territory and come in different configurations and profiles. Corner stores that had been opened for a median of 8 in the urban and 5 years in the rural area. On average, they were opened 14 hours per day. Most respondents were male in their thirties (Appendix A).

When discussing the origins of the store, most proprietors (27/30, 90%) noted that this was due to a family tradition and that they grew up knowing the business. *<<...I love business because since I was a kid, my mom had a little shop. I grew up in the store in San José Pinula… since I was born, she already had the store… imagine that.>> (Male, 68, urban setting)* Another important reason, particularly among female proprietors, was to contribute to the household income. For example:

<<My family for a long time, since before the armed conflict, have been merchants. My parents were some of the first merchants in the municipality of Chisec. From those times on, I came with my mom for vacations to support her on the business. When I got married, I was in the house and my husband went to work in the bakery. I realized that the house was in a visible and commercial area, so I decided to install a corner store to generate extra income and support the family…>> (Women, 35, rural setting) Owning a store enabled several women to raise money for household expenses when they otherwise would not have access to cash flow. It also helped to lower the costs of family expenses when those could be sourced through the store.

Stores were also thought of as part of a larger family subsistence economy, particularly in Chisec, where to store revenues were mostly used to cover daily household expenses. Any small savings were spent on other high-priority items (e.g., school tuition). In Chisec, whatever is left from the earnings is added to those from growing maize, squash, and beans. *<<...we are poor people; my parents didn't have resources. I wanted to study when I was a child, but I had no option. I sold soda drinks when I was 14 years old in the park… I had $33 saved and I started a corner store because there was no other option. With the little earnings of the corner store I support my family…>> (Male, 28, rural setting).*

Advertising strategies and product placement

Proprietors highlighted that distributors were the point contact person and primary communication channel with the food and beverage industry suppliers. They mentioned that distributors do the following activities: identify new corner stores and establish contact with proprietors, offer products and discounts, take orders and supply products, suggest the quantity of product to buy and new products, offer and place an advertisement, offer shelves or refrigerators to place their products and sometimes organize them, guarantee that their products are visible, check other brands' products are not in their shelves or refrigerators and ask how the competition is doing.

According to proprietors, the distributors safeguard that UPF from their brand must be clearly and easily visible or "in the line of sight" of the customer: *<<...the best way of selling is having the product on sight. I notice when I place a juice in the refrigerator outside, and it sells more than when is inside.>> (Male, 37, urban setting)* In Chisec, proprietors are grateful they receive equipment to organize UPFs:*<<…to exhibit and promoting, making it visible. In the case of Big Cola, they give you a rack and people can see it>> (Female, 23, rural setting)* As seen through field observations, stores are designed so that adults tend to see directly at snacks and beverages, while children are at the level of candies and chocolates behind the glass counter.

According to respondents, this is one of the reasons distributors provide the display racks and refrigerators that were found in most (23, 77%) stores. Racks and refrigerators have the advantage that UPF is readily available for the consumer to grab. *<<Those racks are from the industry. They offer it for the exhibition. It is being displayed and it looks nice and organized.>> (Female, 42, urban setting)* Likewise, a narrative from Chisec also shows how the racks help to organize UPF by price: *<<They gave the racks to place the products when I started buying with them. A few days ago, Tortrix left a rack and it is in order of price: on the top $0.13 products and the bottom $0.19 products.>> (Female, 22, rural setting).*

Industry refrigerators used to be behind bars, inside the store, to avoid products from getting stolen. Currently, they are placed at the customers' reach. *<<Fridges are placed there [outside the counter] because they are on sight for the people, anyone can take the product they want, not what we offer.>> (Male 30, urban setting)* Also, this equipment is easily available for the proprietors: *<<…coke offered me a 5 door refrigerator as is an advantage to them to offer the product. I just had to give a copy of my ID, information from the store, and at the next day I had the cooling camera>> (Female, 23, rural setting)* On the other hand, placing UPF from other brands on racks and refrigerators provided by the industry may sometimes lead to conflict with the distributor. Respondents said that distributors get mad as they expect only their own brands to be displayed in the equipment they provided.

Another advertising strategy that the store proprietors acknowledge is having an assorted store with multiple UPFs as this makes them more competitive compared to other stores. Customers are attracted to stores that are filled with UPF and where people converge. *<<...there are stores that sell more and some that sell few products and this is because the first is filled with plenty of products, then attention is drawn to the people. They come and ask and they find products, they see around and take more products. Maybe they go to other stores and they don't find the product they are looking for, so they never return to that store. >> (Male, 23, rural setting).*

Respondents also note that product advertising is useful to identify a store and to promote new UPF products. According to them, advertising that informs on UPF is essential and the best combination is when the industry gives introductory discounts for new products – it is a way to get customers hooked. *<<When it is about new products, of course, you need advertising to show it to the public, it helps to show it to the people. It is very attractive to the children – especially in the case of little toys and figures.>> (Female, 35, rural setting).*

Most (27, 90%) respondents confirm that distributors always ask for permission to place POS advertising. There was no consensus among proprietors, but distributors usually placed ads every other month. Distributors know that due to respect they have to do so and if they don't, the proprietors will take away the poster or the material they placed. *<<I get mad if they don't ask me permission because it is my establishment. Ads don't really contribute to the store, but the companies want to take possession of the space. If they come politely and ask, I will let them place the ad.>> (Male, 37, urban setting)* This is the same dynamic in Chisec: *<<Distributors ask to place the ads. They come and say: "we bring this quality product, we give it to you to try it, do you allow us to place a poster" and most people say "yes…".>> (Male, 30, rural setting)* Interestingly, some respondents point out that ads do not necessarily influence customers' choice since they already have in mind what they will purchase as if they had a favorite UPF.

Advertising influence

According to most (27, 90%) respondents, purchasing patterns differ by age. Children and adolescents buy UPF based on lower prices and usually can only afford candies and snacks (price range observed: $0.06-$0.8). Adults usually buy more expensive UPF such as soft/energy drinks (price range observed: $0.27-$1.6) or cooking ingredients (e.g., sugar, oil, soups, etc.) in comparison with children. *<<The difference is that children buy sweets, gums and snacks. Adults buy energy drinks, alcoholic beverages, or cooking products. Children buy cheaper products.>> (Female, 30, rural setting)* Likewise, a respondent from the city: *<<I have seen adults buying snacks, cookies, and sodas. They do it because of our economy. Because they can't afford chicken or beef and if you don't have money, you get by with snacks and sodas. Children prefer sweets like chocolates.>> (Male, 37, urban setting).*

Proprietors confirmed that strategies like using cartoons' characters or toys are effective to reach children. They claim that children also buy according to the package or toy inside the product and specifically request them from their parents. *<<...Kids want to buy snacks because of the toys or stickers, not for the flavor, just because of the product's image.>> (Male, 37, urban setting)* In the rural setting, proprietors have the same perception: *<<It is very attractive especially for children. In the case of toys or drawings with the shape of a dragon, they will ask for it. They don't see the flavor just the images of the dragon.>> (Female, 35, rural setting)* We asked the proprietors if they thought women and men purchased different UPF products; however, no gender differences were mentioned.

Distributors' mediating role

According to proprietors, each distributor has a set of delivery routes that lasts between 3 to 6 months before they rotate them. This means that they might develop a relationship with proprietors. We observed that distributors (accompanied by a security guard) typically travel in a small truck with the company's logo. Some wear a company's uniform whereas others don't and travel in a small unbranded truck to avoid extortion in certain neighborhoods. Each distributor usually visits each store once or twice a week. This schedule enables them to actively suggest and sell more products to proprietors so the corner store is always stocked (another advertising strategy as previously mentioned). This means that most store proprietors do not have their inventory, relying instead on distributors to make stocking suggestions. *<<Well, the distributor comes and makes an inventory of their company's products. Then, they tell us how*

much we are missing, the quantity, and we analyze if we have the means to pay.>> (Male, 60, urban setting) This is a shared practice in Chisec: *<<I don't have a record of products. When distributors come, I tell the boys [distributors] to tell me how much is needed and I see if I can purchase more or not.>> (Male, 31, rural setting)* Proprietors emphasize that having an inventory requires time and some discipline which is hard to achieve. This opens the door for the distributors to access the decision-making processes including what and how much to purchase. *<<It is difficult to keep an inventory; I haven't done it yet because it requires commitment. I am selling without keeping control, I just see that the products don't get lost.>> (Female, 30, rural setting).*

The relationship between the distributor and proprietors aspires to be strictly commercial and transactional. However, they might develop a closer relationship, which is acknowledged when the proprietor receives discounts, bonuses, or when they communicate through text messages or phone calls. *<<...most of us are friends, we are friends besides our provider-client relationship. Well, I have made good friendships outside of that. I consider them my friends and they consider me a friend. I will not tell you all but, I have a good relationship with the majority.>> (Male, 37, urban setting)* In Chisec, these closer relationships are explained in the following way: *<<Is better to establish a friendship with them [distributor], because they will tell me than within 15 days a certain product will come cheap or with promotions, so they say: "I recommend you to buy later". Is better being direct, it suits me better>> (Female, 30, rural setting).*

Besides, most distributors offered spontaneous discounts or free products during their visits. Proprietors perceived this as an integral part of the negotiation with the distributor (26/30, 86%). For example, one proprietor remarked: *<<You buy a box of Gatorade and they give you three bottles for free, that is a bonus. Then, this helps you to earn some money.>> (Male, 48, urban setting)* In the city, bonuses are frequent since stores sell more UPF. In Chisec, even though there are plenty of stores, not all sell the same amount as in the city to access bonuses. Instead, the distributor pushes the proprietor to purchase other products. This is the general experience in Chisec: *<<I have conversations with some of them [distributors]. I tell them I don't want more products, but they are insistent and show me their UPF catalog. In the end, I end up purchasing UPF I didn't want, but it's o.k.>> (Female, 30, rural setting)* If the proprietor develops a closer relationship with the distributor, it might be more likely that the latter offers a bonus or information tips independently from the setting.

Warehouses' role

Another way corner stores stock UPF product is from the warehouses. These buy UPF directly from the industry in bulk and therefore get lower prices. Some proprietors feel that the distributor will rather sell products in large quantities to the warehouse than to the corner store. *<<What they ask you first is where do you come from. I say "from a store" and they tell you "go with the big warehouses, they are in charge of re-distributing here.>> (Male, 34, rural setting).*

In the urban and rural settings, proprietors assess the advantages and disadvantages of buying directly from the industry compared to the warehouse. When buying directly from the industry, products will be delivered to the store and they can return them if damaged or expired. However, sometimes is more expensive compared to the warehouse. *<<With the warehouse it might be cheaper the product, but we have to account for fuel and a faulty product like a snack's*

broken bag that doesn't have change. However, sometimes the difference from buying between the warehouse and the distributor might be substantial>> (Male, 37, urban setting) Proprietors might access credit or discounts if they have a good relationship with the warehouse owner. Expired or damaged products cannot be returned at the warehouse. Also, some proprietors perceive the warehouses as competition. *<<When I buy with the industry I pay in cash at the moment, but in the warehouse, they help us with credits of $67, and once we sell the product we can go and pay back…>> (Male, 31, rural setting)* In general, stocking the corner store has been the traditional role of the distributor, however, the warehouse variant is gaining some traction in the UPF supply.

Are corner stores allies to promote healthy products?

When asked about shifting product lines towards fresh foods or less processed options, the major challenges identified were shelf life, price, and customer preference. Healthy products (e.g., fruits and vegetables) tended to be perishable, so they have to sell fast and also often were more expensive. Moreover, they have additional logistical challenges including weighing at the POS, which takes additional time and limits the ability to attend to several customers at the same time. Furthermore, proprietors mentioned some healthy products need to be kept in an expensive refrigerator. Those provided by the UPF industry cannot be used to store healthy products because are prohibited by the distributor. Furthermore, these are kept at the minimum cooling capacity to keep costs low. *<<It is a big challenge. I would like to sell coconut water from my plot of land. But natural coconut water is $0.53 and is less in amount, people will not want to buy and prefer products worth $0.13 even though it affects their health.>> (Male, 30, rural setting)* Another opinion from zone 1on healthy products: *<<They [healthy products] are perishable. I don't dare to buy them because I have to keep them refrigerated. These products don't move and to sell them they need to be fresh>> (Female, 42, urban setting).*

Respondents also perceive that customers already have strong perceptions about what a corner store should sell, and it does not include healthy products. Customers come looking for specific UPF items and if the store doesn't have them, they will simply go to another one and the proprietor will lose business. *<<...the consumer purchases what he wants. I might tell him that is bad for his health, but either way, if he wants the product, I won't close his options. It represents an income for me. I, simply, give the product he asks for, but it is not that I am forcing him, he is asking for it.>> (Female, 35, rural setting)* Likewise a respondent from the city:*<<The challenge is finding people that want healthy products. Besides, those products are pricy and people buy what is cheaper>> (Female, 19, urban setting).*

During the interviews, we also asked proprietors if a health-warning label on the nutritional content or health consequences of UPF would be useful to reduce consumption. According to them, customers will not be aware, similar to the label in alcoholic beverages or cigarette packs. *<<People don't care about that [labels], I'll give you an example. Alcoholic beverages have a label and people know how to read and are professionals, but they keep consuming it.>> (Male, 34, rural setting)* Labelling wouldn't work since customers search for UPF due to lower prices and are considered ready-to-eat food.

According to our findings, the food and beverage industry rely on POS advertising to position their products. Store proprietors' decisions that are influenced by the industry's distributors

help to shape the foodscape. Therefore, to regulate the availability and exposure to UPF, we need to better understand the stores as part of the informal economy in a middle-income country that has deep roots in inequality and poverty where a corner store appears to be one of the few options of being economically active. In a way, food environments, in this case, saturated with UPF, can reproduce health disparities and are a reflection of the economic inequality (Cannuscio et al., 2010; Miewald & Mccann, 2014; Popkin, B. & Reardon, 2018)(Cannuscio, Weiss, and Asch 2010; Miewald and Mccann 2014; Popkin, B. & Reardon 2018).

In conclusion, according to our findings, store proprietors and UPFs distributors develop a companionship relationship where they negotiate promotions, information, product placement, stocking, and POS advertisement. The food and beverage industry has established a successful relationship with proprietors to guarantee UPF availability and advertising in corner stores in urban and rural Guatemala. Considering that proprietors in Guatemala are unlikely to promote and support the availability and advertising of healthy foods, healthcare policymakers and should take into account this relationship when designing, planning, and implementing UPF regulations in Guatemala and elsewhere.

Specific objective 11

To compare the Food Retail Environment Index between three neighborhoods of different socioeconomic status in Guatemala

This objective was carried out to further the knowledge of the foodscapes in Guatemala. In Latin America, overweight and obesity prevalence have increased in the last decade. Guatemala, in particular, is struggling with the double burden of disease where underweight and overweight coexist. In 2015, an estimated 28% of Guatemalan students between 13 and 17 years of age were overweight and 7% obese. Most (65%) students reported drinking soft drinks at least once a day. Much of the rising prevalence of overweight and obesity has been attributed to the growing predominance of unhealthy packaged and fast foods. Corner stores in Guatemala (including those near schools) sell primarily energy-dense, nutrient-poor snacks and sugar-sweetened beverages (SSBs), which are heavily marketed to children. In addition, fast food venues in Guatemala City have been found to target children using price incentives and toy giveaways. Public health action to improve the food environment has been limited. Thus, we created maps illustrating the prevalence of food swamps and disparities in exposure to unhealthy food environments by socioeconomic status (SES) and urbanicity as a tool to influence Guatemalan public health policy.

Data sources and map logistics

We mapped the food environment in two neighborhoods (middle- and high-SES) in Guatemala City and Chisec, a low-SES rural indigenous community four hours north of the City. A trained research assistant walked through each neighborhood over six days in September 2018. Corner stores, chain supermarkets, farmers' markets, fast food venues (pizza, burgers, and fried chicken), parks, and schools (private and public) were georeferenced with a GPS device (Garmin Oregon®). Corner stores are usually located in the garage or entrance of small houses, family-owned, and part of the informal economy. We used QGIS® version 2.18, a free and open-source geographic information program, to overlay locations of food outlets and parks on a Bing® base

map layer. Using the "fixed distance buffer" function from the geoprocessing analysis tool, a 493.13 ft buffer was drawn around each school. This buffer was chosen as it has been previously used in Guatemala to survey corner stores around schools. In the analysis tools, the "count points on polygons" function was used to assess the number of fast-food venues and parks within the buffer. We used the RFEI to calculate the healthfulness of the food environment around each school as it is associated with higher odds of obesity. The RFEI considers fast food retailers and corner stores as unhealthy food outlets and grocery stores and markets as healthy. The index is calculated as the ratio of unhealthy to healthy outlets; a higher score indicates a less healthy environment. Where there were no healthy outlets, we used 1 as the denominator. The RFEI of each school across the neighborhood was added and then divided by the number of schools in each territory to determine the mean RFEI.

Highlights

We identified 280 corner stores (Appendix B) in the City and 204 in Chisec. Corner store density was higher in the middle- urban and low-SES rural areas; fast food restaurant density was higher in the high-SES urban area (no fast-food restaurants were found in Chisec). Using the RFEI cutoff 3.79, all surveyed neighborhoods were classified as food swamps. The highest RFEI was found in the middle-SES urban and low-SES rural areas. The maps are presented in the annex part of this report.

To the best of our knowledge, this is the first evidence of a food swamp in a low/middle-income country, Guatemala. However, our findings should be interpreted in light of some limitations. We were only able to survey two areas in the City and one rural town. However, a strength is that we were able to get comprehensive GIS data for venues that are not registered in the formal economy and likely substantially contribute to the intake of unhealthy foods and beverages.

Action

These maps are a powerful tool for showing the proliferation of food swamps, and SES disparities, in Guatemala. Corner stores and fast-food restaurants are part of Guatemala's informal and formal economy, respectively. Each faces different regulatory challenges and are difficult to monitor over time. Thus, to date, no one has examined the healthfulness of the built environment across neighborhoods, nor explored sustainable, large-scale strategies to limit exposure to food swamps. The sheer number of unhealthy food businesses and stark disparities across SES is astounding, and maps will be a useful tool for engaging planners, developers, and policymakers in discussions around the built environment and health. Maps may also be useful to school administrators, who might adopt institutional policies, such as closed campuses and nutritional standards for school food vendors to reduce student exposure to unhealthy retailers.

Specific objective 12

To determine the relationship between the food and beverage industry and schools in Guatemala City

For this objective were 20 school principals were interviewed. The children's foodscape includes channels and venues like the media, the internet, the POS, the home, and the educational space. Schools are a place where children learn dietary habits. This is the reason to understand the perception of principals regarding their relationship between the food and beverage industry.

We used a simple of 20 schools (10 public and 10 private) within the metropolitan area of Guatemala City. The unit of analysis was the school principal or any educational authority that

the principal delegates. The interview guide directed to principals explored the following themes: products from the industry the school sells, management of the store, knowledge on laws for feeding students, and history of the relationship between school and industry. The fieldwork was done from November 2019 to March 2020. Quantitative data was analyzed in Stata, while qualitative data were coded in Dedoose.

The main finding is that schools are a disputed space for the food and beverage industry because they see the commercial value. After all, children generate dietary patterns from a very young age. The relationship between the school and the industry is mediated by incentives and benefits offered to the schools like discounts, equipment, refrigerator, free products, promotions, awnings among many other elements that carry the brand of the industry. This is marketing even though the school principals don't understand it like that. Reaching oral agreements is a strategy from the industry to become providers to the schools. This is interesting because the oral agreements convey trust between the parties that in some cases have lasted an average of 10 years. There is another variant to this relationship where a third party provides the food and beverage stock to the school.

None of the schools have a guideline to restrict, prohibit, or regulate the marketing and relationship between the school and the food and beverage industry. Only among public school principals that the *Ley de Alimentación Escolar* (2017) is perceived as a strategy that came to strengthen the good nourishment of the students, it also increased alumni attendance.

Regarding the perception the school principals have towards healthy dietary patterns, they claim that the food consumption among children is a responsibility carried by the parents and ultimately is an individual choice. Prohibiting or restricting all the food and beverage industries' products is not a possibility since the store and cafeteria serve an important economic and social role for the students and the school.

The results can be interpreted through the concept of school commercialization that Molnar & García used to describe the phenomenon of the food and beverage industry using the schools as a point-of-sale and marketing enclave. The concept can also be applied to the phenomena found in Guatemala because the industries try to colonize a space that is meant to educate students in order to influence their dietary habits.

Argentina, Bolivia, Guatemala and Peru

(NEW) Specific Objective 13[3]

13. To design and validate a methodology for monitoring and evaluating the internet marketing of multinational fast-food chains in response to the COVID-19 pandemic

This new research objective, which was added to the project as a rapid response to the current context of the COVID-19 pandemic, was approved by IDRC in July 2020 and started implementation then. This new component aimed to design and validate a methodology for monitoring and evaluating the internet marketing of multinational fast-food chains in response

[3] This new objective was added to the Project in month 24 but it started in month 25, as a result of the extension of the Project.

to the COVID-19 pandemic. The social distancing measures implemented in most countries have led to an increase in the use of digital media (and thus, individuals' exposure to online advertising) and, consequently, it may have affected the dietary patterns of the population. The food industry has adapted to this new context. Therefore, as countries design public health policies to restrict ultra-processed foods advertising, it is key to use valid and reliable instruments to collect and analyze data that can be compared between countries worldwide during the COVID-19 pandemic and its aftermath. The proposed methodology followed a two-stage analysis procedure using a mixed-methods approach.

This research objective was led by FIC Argentina in collaboration with Universidad de Lima and Fundación Aldo Castañeda. Peter Buse supervised all the research process. The development of this component assumed a strong collaboration among the three teams. FIC Bolivia was part of the data collection and research protocol discussions but was not part of the rest of the research activities. Several meetings between the research team were conducted along all the research process.

The research team designed a research protocol that describes the mixed methods research design and the contextual framework of this objective. The sample included the multinational fast-food restaurants that are present in the four countries and a period that included one month before the date each country announced the state of national emergency due to the COVID-19 pandemic and three months after that timepoint.

a. Qualitative phase: development of themes and categories

A random subsample of the posts made by the brands was analyzed. This subsample was analyzed to develop a qualitative content analysis tool to examine COVID-19 related content. Given the approach, this tool emerged from the data itself, following an inductive and iterative process, being flexible enough to accommodate new insights provided by the addition of new data. The qualitative component included the development and description of different themes and categories. This inductive component allowed for any unexpected themes to develop during the coding process. Two researchers searched for patterns from the raw data. Group discussions were held to discuss agreement and disagreement between the two researchers. The main themes and categories that emerged are explained in the following Table.

Table 4: Themes and categories. Qualitative analysis

Theme	Category
Metadata	Hashtags related to COVID-19
References to social distancing measures	Reunion-Coming back Together
	Social distance
	Change/Adaptation
	Care
	Safe and reliable service
	Domesticity
	Practicality
Corporate Social Responsibility (CSR)	CSR with public entities, NGOs
	CSR with other corporations
	CSR (only the brand)
Health/Safety Recommendations	Compliance with safety protocols

	Advice about COVID-19 risk mitigation
Mode of payment and buying	Mode of payment (bank transfer, etc)
	Delivery services (brand service)
	Delivery services (not brand services)
	Pick up services

b. Data collection instrument validation

In the second stage, a sample of all the posts made by the selected brands on their Facebook timelines was collected manually, considering 4 months (1 month before and 3 months after the date each country announced the state of national emergency due to the COVID-19 pandemic). With this sample, a quantitative content analysis tool was developed based on existing literature (Busse, 2016, 2018; Freeman et al., 2014) and also, on the results obtained during the first stage. In that sense, the tool included previously used variables, but also implemented new context-specific variables.

We developed a coder´s manual where all the definition of the variables was included. The data collection instrument was developed using Google Forms. We developed different versions of the data collection instrument and the coder´s manual until the data collection instrument was considered reliable. These are the final versions of the data collection instrument https://forms.gle/QCEv8tHdTDiX2prA9 and the coder´s manual https://drive.google.com/file/d/1mSBdlFov91_wwwxlK_ThnLOh-Wj30d6a/view.

For the validation of the tool, we assessed the reliability of the data collection instrument. The specific objectives of the pilot included:

a. To estimate the level of inter-encoder agreement

b. To analyze the accuracy of the definition of the variables included in the coder´s manual.

c. To identify possible problems related to the use of the data collection instrument

Having developed an initial set of candidate variables for inclusion in the data collection instrument, we then went on testing the level of intercoder agreement. This informed the development of the final version of the data collection instrument. This was subject to two rounds of piloting, and revisions to the data collection instrument were made based on the results of each pilot. In both rounds of piloting, research assistants wrote down all the inconsistencies they found. The results of the intercoder agreement and the feedback from research assistants were assessed to help refine the definition of variables. Krippendorff's alpha was considered the most appropriate index. This index is considered the most appropriate for content analysis[4]. R Software was used for index calculation.

Research assistants were trained to conduct the pilot. Coding was done independently and without consultation or guidance. Four research assistants were part of the process: two of them were part of the research team who was involved in the qualitative stage and the other two were not part of the research team. The first pilot involved 177 (15% of the total sample) posts including posts from the four countries and the four fast-food restaurants. The subsample was divided into two groups of coders. The acceptable level was considered >=0,8 as suggested by

[44] Krippendorff, K. (2018). *Content analysis: An introduction to its methodology*. Sage publications.

the literature[5]. The variables in red (Table 5) had an Alpha below the minimum acceptable level of reliability.

Table 5: Pilot 1. Results 1

	TYPE	Alpha	LL95%CI	UL95%CI	Units	Observrs	Pairs
Hashtags related to COVID-19	Nominal	**0,9714**	0,9141	1	90	2	90
Reunion-Coming back Together	Nominal	**0,5504**	0,3051	0,7956	90	2	90
Domesticity	Nominal	**0,5107**	0,3149	0,6819	90	2	90
Social distance	Nominal	**0,3584**	-0,0693	0,7149	90	2	90
Change/Adaptation	Nominal	**0,4246**	0,1689	0,6484	90	2	90
Care	Nominal	**0,7521**	0,5043	0,9504	90	2	90
Safe and reliable service	Nominal	**0,5175**	0,1959	0,7856	90	2	90
Corporate Social Responsability	Nominal	**0,4492**	0,2289	0,6695	90	2	90
Compliance with safety protocols	Nominal	**1**	1	1	90	2	90
Advice about COVID-19 risk mitigation	Nominal	**0,2897**	-0,2431	0,7336	90	2	90
Mode of payment (bank transfer, etc)	Nominal	**0,5186**	0,0371	0,9037	90	2	90
Delivery services (brand service)	Nominal	**0,7271**	0,4543	0,9318	90	2	90
Delivery services (not brand services)	Nominal	**0**	-1	1	90	2	90
Pick up services	Nominal	**0,9382**	0,8456	1	90	2	90

	TYPE	Alpha	LL95%CI	UL95%CI	Units	Observrs	Pairs
Hashtags related to COVID-19	Nominal	**0,7458**	0,5934	0,8983	80	2	80
Reunion-Coming back Together	Nominal	**0,721**	0,5535	0,8605	87	2	87
Domesticity	Nominal	**0,3707**	0,1419	0,5995	87	2	87
Social distance	Nominal	**0,5393**	0,1553	0,8464	87	2	87
Change/Adaptation	Nominal	**0,4605**	0,1907	0,7302	87	2	87
Care	Nominal	**0,6652**	0,4644	0,8326	87	2	87
Safe and reliable service	Nominal	**0,6193**	0,3908	0,8096	87	2	87
Corporate Social Responsability	Nominal	**0,1788**	-0,3002	0,5894	87	2	87
Compliance with safety protocols	Nominal	**1**	1	1	90	2	90
Advice about COVID-19 risk mitigation	Nominal	**0,5176**	0,0351	0,9035	87	2	87
Mode of payment (bank transfer, etc)	Nominal	**0,852**	0,556	1	87	2	87
Delivery services (brand service)	Nominal	**0,7753**	0,5506	0,9438	87	2	87
Delivery services (not brand services)	Nominal	**0,6567**	0,1419	1	87	2	87
Pick up services	Nominal	**0,7213**	0,5587	0,8606	87	2	87

The second pilot involved 95 posts including two countries (10% of the total sample). The level of agreement improved from the first pilot. Only four variables had alpha below 0,8: reunion-coming back together; care and domesticity (Table 6).

[5] Krippendorff, K. (2018). *Content analysis: An introduction to its methodology*. Sage publications.

Table 6: Pilot 2. Results

	Alpha	LL95%CI	UL95%CI	Units	Observrs	Pairs
Hashtags related to COVID-19	0,88	0,6367	1	49	2	49
Reunion-Coming back Together	0,24	-0,3724	0,8475	48	2	48
Domesticity	0,90	0,6952	1	48	2	48
Social distance	1,00	1	1	48	2	48
Change/Adaptation	0,38	-0,0565	0,7359	48	2	48
Care	0,65	0,1204	1	48	2	48
Safe and reliable service	1,00	1	1	48	2	48
Corporate Social Responsability	0,85	0,5425	1	48	2	48
Compliance with safety protocols	1,00	1	1	48	2	48
Advice about COVID-19 risk mitigation	no variation					
Mode of payment (bank transfer, etc)	1,00	1	1	48	2	48
Delivery services (brand service)	0,87	0,7082	1	48	2	48
Delivery services (not bran services)	0,96	0,8736	1	48	2	48
Pick up services	0,79	0,6154	0,9573	48	2	48
	Alpha	LL95%CI	UL95%CI	Units	Observrs	Pairs
Hashtags related to COVID-19	0,9	0,735	1	47	2	47
Reunion-Coming back Together	1,0	1	1	47	2	47
Domesticity	0,5	0,1162	0,7961	47	2	47
Social distance	0,7	-0,022	1	47	2	47
Change/Adaptation	0,7	0,3911	0,8893	47	2	47
Care	0,8	0,5848	1	47	2	47
Safe and reliable service	0,8	0,5848	1	47	2	47
Corporate Social Responsability	0,8	0,373	1	47	2	47
Compliance with safety protocols	0,7	0,3818	1	47	2	47
Advice about COVID-19 risk mitigation	0,7	-0,022	1	47	2	47
Mode of payment (bank transfer, etc)	0,7	-0,022	1	47	2	47
Delivery services (brand service)	0,8	0,6593	0,9574	47	2	47
Delivery services (not bran services)	1,0	0,8571	1	47	2	47
Pick up services	0,9	0,7815	1	47	2	47

A report with a description of data validation was developed: https://drive.google.com/file/d/14SGaBtU2NTr51pke9G3phra1trv8T-7V/view

Data analysis

After the instrument was considered reliable, we proceeded to analyze the whole data corpus. We developed the following activities: a. we selected from previously validated tools the variables we were going to include b. we developed a new data collection instrument and a coder´s manual, c. six research assistants were trained during a two and half hours workshop (https://drive.google.com/file/d/1-ZXqIGALeZ-U04c0fxNfy0Ml0Sh8JGAN/view).

After the training, they completed an exercise including the codification of 10 posts. The agreements and disagreements were discussed among the research team. Minor modifications to the coder's manual were included. This aspect was crucial to increase the reliability of our findings. A sub-sample (10% of the final sample) was analyzed to assess intercoder agreement after the data entry. Variables highlighted in orange showed agreement levels below 0.7.

According to Krippendorff, researchers should rely only on variables with reliabilities above 0.8, and consider variables with reliabilities between .667 and .800 for drawing tentative conclusions. However, Landis & Koach characterized values < 0 as indicating no agreement and

0–0.20 as slight, 0.21–0.40 as fair, 0.41–0.60 as moderate, 0.61–0.80 as substantial, and 0.81–1 as almost perfect agreement.

Table 7: Total sample. Inter coder agreement

Variable		Estimate	Lower	Upper
Competitions/Prizes (interaction with web page)	alpha_K	0,7	0,3236	1
Special discounts	alpha_K	1,0	1	1
Sale/Prizes	alpha_K	0,8	0,6997	0,9372
Competitive/Unique	alpha_K	0,5	0,1433	0,8611
New/Innovative	alpha_K	0,3	-0,1619	0,7475
Fast food advantages	alpha_K	0,6	0,3747	0,8963
Brands association	alpha_K	0,9	0,7136	0,9656
Corporate Social Responsibility	alpha_K	0,9	0,68	1
Hashtags related to COVID-19	alpha_K	0,8	0,6042	0,9201
Reunion-Coming back Together	alpha_K	0,6	0,2923	0,8401
Domesticity	alpha_K	0,7	0,5592	0,896
Social distancing	alpha_K	0,5	0,03641	1
Change/Adaptation	alpha_K	0,5	0,2491	0,7382
Caring	alpha_K	0,9	0,6823	1
Reliable service	alpha_K	0,3	-0,1176	0,7777
Safety protocols	alpha_K	0,9	0,7718	1
Advice about COVID-19 risk mitigation	alpha_K	-0,1	-1,428	0,6651
Mode of payment (bank transfer, etc)	alpha_K	0,6	-0,02725	0,9382
Delivery services (brand service)	alpha_K	0,9	0,7783	0,9582
Delivery services (not brand services)	alpha_K	0,8	0,6274	0,893
Pick up services	alpha_K	0,7	0,5482	0,9114

For the analysis, we included all the variables. The analysis (Table 8) showed that advertising techniques changed in the context of the COVID-19 pandemic. In the four countries, new advertising techniques appeared after social distance measures were implemented and were the 5 most used during this period: the reference to households (domesticity), the use of Hashtags related to COVID-19, the compliance with safety protocols, and the need of change and adaptation. The four countries used similar strategies. The adaptation of delivery services was used in two periods.

Table 8: Ranking of marketing strategies before and after social distance measures used in Facebook posts. Argentina, Bolivia, Guatemala, Perú.

Country	Ranking	Advertising technique pre-social distance	Advertising technique after-social distance measures
Argentina	1	Special discounts	Delivery services (not brand services)
	2	Delivery services (not brand services)	Domesticity
	3	Competititve/Unique	Delivery services (brand service)
	4	New/Innovative	Pick up services
	5	Brands association	Special discounts
		Corporate Social Responsability	
		Competitios/Prizes (interaction with web page)	
Bolivia	1	Special discounts	Hashtags related to COVID-19
	2	Delivery services (not brand services)	Delivery services (brand service)
	3	Sponsorship/Brands association	Delivery services (not brand services)
	4	Delivery services (not brand services)	Safety protocols
	5	Safety protocols	Domesticity
Guatemala	1	Special discounts	Delivery services (brand service)
	2	Brands association/Sponsorship	Delivery services (not brand services)
	3	Competitions/Prizes (interaction with web page)	Special discounts
	4	Competititve/Unique	Pick up services
		Delivery services (not brand services)	
	5		Hashtags related to COVID-19
Perú	1	Special discounts	Delivery services (brand service)
	2	Delivery services (brand service)	Change/Adaptation
	3	Sale/Prizes	Domesticity
	4	Brands association/Sponsorship	Pick up services
		Competitions/Prizes (interaction with web page)	
	5		Hashtags related to COVID-19

Project implementation and management

The activities developed to accomplish the specific objectives in every country, as well as the difficulties experienced and any modifications to the original research protocols, are commented on in detail in the following subsections.

Argentina

The administration process between FIC Argentina and Universidad de Lima did not have relevant obstacles during the implementation of the project. Due to the economic context in Argentina, we were not able to receive the funds during a certain period, but this problem could be solved.

The technical reports were successfully submitted. As for the financial report, there were some minor adjustments to the original budget. An in-person meeting to present findings in La Paz, Bolivia, was scheduled for year 2. Due to the pandemic Covid-19, these funds were not able to be executed for this purpose. We presented a 4 country- regional proposal to execute these funds to our Grant Administrator. The new proposal was to design and validate a methodology for monitoring and evaluating the internet marketing of multinational fast-food chains in response to the COVID-19 pandemic. The funds for the trip to Bolivia which included travel expenses were reallocated for research activities including research protocol development, data collection design, data analysis, and reports elaboration.

The original budget included an open access publication. These funds were not used because the publication has not already been accepted for publication. These funds were reallocated for research expenses. Two research assistants were hired for data collection activities included in the new objective.

The research team had some changes. Lorena Allemandi, who was the director of the Food Policy Department left the organization and was replaced in her role by Luciana Castronuovo, who worked as project coordinator. These changes did not imply modifications to the working plan. We have managed to follow the schedule that we have set for each aim of the project. In the next months, we will be working on the elaboration of the scientific publications.

Bolivia

All of the activities considered for achieving the specific objectives for Bolivia were fulfilled, as well as new activities were added, without affecting the completion of the project activities at the expected date.

In order to strengthen our research project, a Scientific Committee was created to monitor the entire research process, which resulted in the development of a joint effort to advance research and policies in Bolivia and reduce the overweight and obesity. This Scientific Committee is made up of several institutions and constitutes a technical and defense space, including the following institutions: Chamber of Deputies, Education and Health Committee, Ministry of Health, Vice Ministry of Consumer Protection, Unit Coordinator of the Technical Committee of the Council of Food and Nutrition (CT - CONAN), Department of Self-government of La Paz (Municipal Autonomous Government of La Paz), Universidad Mayor de San Andrés (Faculty of Medicine), Public University of El Alto (Academic Coordinator), Franz Tamayo University, National

Association of Nutritionists and Bolivian Diet and UNICEF. This committee held its second meeting in February 2020 and since March, the meetings have been held virtually with some of the Committee's institutions.

The project closing meeting was organized through virtual channels. The organization and holding of a workshop to present the results of the project with the four countries and the presence of representatives of IDRC, the United Nations System, embassies, Bolivian public institutions, the European Union, etc., was therefore scheduled for August 13, 2020.

As an initiative of FIC Bolivia, the study "Food advertising and physical activity during quarantine" was carried out in the 9 departments of Bolivia. The results of this study will be socialized throughout the country, with the support of a design expert and in coordination with the Ministry of Health.

We also participated, together with the other countries of the Consortium, in collecting data for the analysis of fast-food advertising on Facebook.

According to the recommendation of FIC Argentina, the nutritionist's contract was extended from 7 months to 14 months.

The refresher course in public health and nutrition for the specialization of professionals related to the subject could not be developed due to global epidemiological eventualities.

The COVID19 pandemic caused some of the activities to be delayed and changed their orientation; however, the resources were used in activities such as meetings with the Committee, support materials with Government institutions and the COVID Study, food, advertising, and physical activity.[6] In addition to using for the payment of salaries for two months of work for the FIC Bolivia team.

Peru

The grant funds for Argentina, Bolivia, and Peru were administered by the University of Lima for the duration of the project. Two interim progress reports, for Year 1 (July 1st, 2018 –June 30th, 2019) and Year 2 (July 1st, 2019 –June 30th, 2020) were successfully submitted. The project was extended for an additional period of 3 months, until September 30th, 2020.

Regarding the financial reports, two were submitted to IDRC for Year 1 and Year 2. For Year 2, there was a variance of more than 10% in the following items: International Travel, Research, and Indirect Costs, where expenses were not executed given that many activities were canceled and/or suspended given to the COVID-19 pandemic.

International Travel expenses not executed included:

1) International Conference Meeting in the United States: Principal Investigator of the project, Peter Busse, had planned to assist the Kentucky Conference on Health Communications, to present the results of the study linked to specific objective 8 (To design, implement and evaluate a media literacy intervention that will empower children and adolescents to mitigate the persuasive effects of food advertising outside

[6] Please find the reporte here: https://www.dropbox.com/s/yvf5gyj49gt7585/Informe%20alimentacion%20y%20cuarentena%20final.pdf?dl=0

the school settings). Some expenses, including the purchasing of airplane tickets and travel insurance, were made before the travel took place. However, the conference was canceled due to the COVID-19 pandemic and took place online in April 2020. The airplane ticket expenses were refunded by the travel agency by mid-September 2020. Travel insurance fees were not refunded.

2) Meeting in Bolivia: an in-person meeting in La Paz, Bolivia was scheduled for the end of Year 2, in order to present the results of the project to regional stakeholders and to evaluate the project internally. Nonetheless, the meeting was canceled due to the pandemic situation and was carried online. As a result, these expenses were not executed.

Regarding research expenses, most of the budgeted items for the different project objectives were expended, and only in some cases, a small balance remained. Nonetheless, there were greater savings in the following items: disseminations materials (7608 PEN); local communications (9458 PEN), and transport (8741 PEN), which were not executed as internal transport, face-to-face meetings, and dissemination activities were suspended due to the country entering a strict quarantine for three months.

The savings from travel activities and part of the remaining balance for research expenses were used to cover the salary of the project coordinator (15 000 PEN) for the research activities of the new objective involving the four countries in the project (to design and validate a methodology for monitoring and evaluating the internet marketing of multinational fast-food chains in response to the COVID-19 pandemic). This was previously approved by the Grant Administrator, Mr. Roberto Bazzani.

Regarding the project activities, these were completed in due time and with no major delays. Most of the research activities were completed during Year 1. Even though the write-up of the studies' manuscripts took a bit longer than expected, they are already finalized and ready to be sent for consideration to peer-reviewed journals. The new research objective involving the four participating institutions was developed according to schedule between July – September 2020 and it is reported in this document.

Guatemala

The grant funds for the project continued to be administered by the Fundación Aldo Castañeda (FAC). The technical progress report, covering the first 12 months of work, was successfully submitted. As for the first financial report, there was a variance of more than 10%, and savings were incurred. The budget categories with variance were: international travel and research expenses.

For objective 9 (To assess the representation of gender in food and beverage advertising in bodegas around public schools) of the project, one research assistant was budgeted for 6 months. Since the execution of this objective was shorter than expected, a surplus of this objective was used to extend the project objective 10 (¨To determine the strategies used by the food and beverage industry to place point-of-sale advertising and other marketing strategies in bodegas around schools¨) in the rural area of Chisec. Local transport and part-time research assistants covered these expenses that included: transportation, lodging, and food expenses (GTQ 2,455.42). Likewise, a research assistant was hired to map zone 10 of Guatemala City for (GTQ2500), to compare with Chisec and zone 1 data. Although budgeted for year two, in-depth

interview transcriptions were covered under Part-time research assistant's (GTQ 450-hour rate for 17.43 hours of verbatim transcription). During May and June, the same research assistant was hired as an external coder for objective 10 analysis (GTQ 6750 for two months). During Year 1, we did not submit any of our findings to any conferences. Therefore we saved GTQ15,603. We also managed to save funds from the in-person meeting in Lima (GTQ 11, 734), since hotel and meal expenses were lower than budgeted.

The final savings from Year 1 research expenses (in-depth interview [GTQ16,895] transcription, camera [GTQ 647], and local transport [GTQ 489]), were then discussed with Mr. Bazzani and the idea of using these funds to interview school principals to understand the relationship between the beverage industry and the schools were approved for year 2. An extra GTQ 27,796, were requested from the original budget for year 2, to cover personnel and research expenses.

Therefore, the final amount budgeted for year 2 was GTQ 259, 847 (45,144 CAD). The cash requirements to cover project year 2 were CAD 37, 183.31 taking into account the positive cash on hand of CAD 7, 960. We received a third payment (September 4, 2019) CAD 24, 314, since the IDRC policy does not allow the advancement of final payments. The final payment will be calculated based on the final financial report and it is set not to exceed CAD 17, 086.

An in-person meeting to present findings in La Paz, Bolivia, was scheduled for year 2. Due to the pandemic Covid-19, these funds were not able to be executed for this purpose. We presented a 4 country- regional proposal to execute these funds to our Grant Administrator. The new proposal is to design and validate a methodology for monitoring and evaluating the internet marketing of multinational fast-food chains in response to the COVID-19 pandemic.

We have managed to follow the timeline that we have set for each of the project's objectives. The fieldwork for objective 12 has finished and we are currently working on analyzing the data. The new objective, to design and validate a methodology for monitoring and evaluating the internet marketing of multinational fast-food chains in response to the COVID-19 pandemic, was completed in September 2020.

Project outputs and dissemination

In the following subsections, all the outputs obtained to date and dissemination efforts taken by the project participants are commented by country.

Argentina

FIC Argentina was part of different events where we discuss food marketing to children.

Name of the event**: Global Health Session on "Childhood obesity in the global health agenda: the role of civil society"**

Place: Buenos Aires, Argentina

Organized by: C20 (https://civil-20.org/c20/wp-content/uploads/2018/01/C20-Summit-agenda.pdf)

Participation: Oral presentation

Date: 7/8/2018

Name of the event: **Publicidad de alimentos en Ciudad de Buenos Aires. La necesidad de una regulación.**

Place: Buenos Aires, Argentina

Organized by: Fundación Éforo

Participation: Oral presentation

Date: 7/8/2018

Name of the event: **"Food Marketing Targeted to Kids: A collaborative and policy-oriented study in Argentina, Bolivia, Guatemala and Peru"**

Place: Lima, Perú

Organized by: Universidad de Lima

Date: January 30th, 31st 2019

An important advocacy action was held in the context of the Youth Olympic Games that were held in the City of Buenos Aires. Considering Coca-Cola was one of the main sponsors of the event, different organizations signed a declaration where they declare that marketing strategies, including the Sports Sponsorship by junk food companies, are an important determinant of consumer choices and that children and adolescents are particularly vulnerable to this type of advertising. For this reason, facilities and public places where children and adolescents spend time should be free of advertising of foods and beverages high in sugar, salt, and fats. In the declaration, organizations demand that the Government of the City of Buenos terminates the sponsorship of the Coca-Cola Company for the and takes the necessary measures to restrict the marketing of unhealthy foods and beverages to children and adolescents. The Declaration was signed for more than 160 organizations, including 10 international organizations: NCD Alliance, Obesity Federation, NCD Child, la World Cancer Research Fund, among others and organizations

from México, Uruguay, Chile, Venezuela, Colombia, Brasil, Canadá, Ecuador, El Salvador, Estados Unidos, Perú, Panamá, y Republica Dominicana. The Declaration can be found at https://www.ficargentina.org/wp-content/uploads/2018/09/180816_declaracion_joj_espa%C3%B1ol.pdf.

A press release was sent to journalists. Some examples of media repercussions in the local press are http://revistacitrica.com/esponsor-poco-saludable.html and also an article in India: https://thewire.in/health/coca-cola-youth-olympics-2018. Also, FIC Argentina legal team and lawyers from other institutions worked on the presentations of a precautionary measure, which was rejected on October 3rd.

Another important action was related to international advocacy. FIC Argentina with other organizations submitted a shadow report to the UN Committee on Economic Social and Cultural Rights (CESCR) (www.ficargentina.org/wp-content/uploads/2018/09/1809_DESC.pdf), which stressed the government's obligation, as found in the National Constitution, to protect people's health, particularly regarding obesity and tobacco control. The report includes recommendations for public policy. One of the recommendations was to regulate and restrict the marketing of unhealthy food and beverages.

FIC's advocacy strategy was fruitful, as the CESCR has recommended that Argentina implement effective public policies to reduce the consumption of unhealthy (https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=E%2fC.12%2fARG%2fCO%2f4&Lang=en), strengthen the link between NCDs prevention and human rights. They recognize the necessity to promote public policies to control NCDs risk factors as an effective tool to protect the right to health. Furthermore, the observations can help to promote effective legislation to reduce the impact of tobacco, obesity, and overweight epidemics in Argentina.

During the period 01/07/2019 – 30/09/2020, we have not designed any press release with the results of our research. However, FIC Argentina has had a strong presence in the media. We have published 190 media articles and different posts on social media. The relevance of regulating food marketing directed to children is mentioned in several articles.

A report with the description of communication action is available at https://drive.google.com/file/d/1C-cH3o9HvUPsPxaxjJ79lrGqwD1M3a-k/view?usp=sharing.

FIC Argentina developed two videos of 1 minute and a half with different teenagers talking about food exposure to unhealthy foods. FIC Argentina launched a dissemination campaign on the impact of junk food marketing among adolescents. This action was aimed at promoting front-of-package labeling warnings in Argentina as a fundamental policy to stop ultra-processed food marketing, misleading advertising, and to guarantee consumer's right to information. A press release was disseminated and a toolkit including the press release, the copies, and social network banners. The campaign had a big impact:

- More than **15 press releases** in media channels
- Videos had more than **20,000 views** on social media
- FIC Argentina gained more than 1900 new followers on social media
- Decision-makers and different influencers shared the content of the campaign

Example: Brenda Austin, Cordoba province deputy, 8432 followers.

The videos are in the following link:

- https://www.youtube.com/watch?v=BghJZL1hAWE&t=7s
- https://www.youtube.com/watch?v=ziWtD8ZOyxo&t=2s

FIC Argentina is working on the development of two scientific publications:

Castronuovo, Luciana; Guarnieri, Leila, Tiscornia, Victoria, Allemandi, Lorena; Narrative review of studies of food marketing and gender. Challenges for researching with a gender perspective, to be submitted to a special issue entitled, "Sex and gender differences in dietary intake and other dietary behaviors across the life course" in Nutrition Journal- BMC.

Castronuovo, Luciana; Tiscornia, Victoria; Guarnieri, Leila, Allemandi, Lorena; *Publicidad de alimentos no saludables dirigidos a adolescentes: perspectivas de los y las adolescentes* to be submitted to Archivos de Pediatría

Meetings with stakeholders: during the conduction of this project we have had meetings with different policymakers who are working on bills to promote marketing restrictions in the context of the front of package labeling policies. We have revised 16 bills and we had meetings with 10 decision-makers from the National Legislative Branch.

Outcomes regarding capacity building

a. *Institutional reinforcement:* Consolidation of the research collaboration between the participating institutions of the project “Food Marketing Targeted to Kids”. The research process involved in the context of the objective that analyzed Facebook posts implied a strong collaboration between the different countries. Researchers from the different research teams were involved in the different phases of the research process. Working meetings were held all along the process.
b. *Increased research capacities:* Leila Guarnieri, a master's degree student, who is part of the Food Policy Department, has been able to increase her research capacities. The

activities involving the narrative review increased her research capacities. She also was involved in the data analysis of focus groups. She learned how to work with the specific software Atlas.ti for conducting qualitative data analysis. She gained specific abilities that are crucial for qualitative research regarding qualitative data analysis. This experience has strengthened Leila Guarnieri's research abilities. Victoria Tiscornia also developed research capacities regarding focus group conduction. She was part of the research groups that coordinated focus group discussion.

c. As part of FIC Argentina's volunteer program, two graduate students were part of this project: Belen Beltramo and Sofía Gatica Miles. They both gained research abilities regarding research methodologies. Belén was part of the narrative review. She gained skills in searching and examining research articles. She learned different criteria for assessing research quality in different research designs. Sofía was part of different research activities. She strengthened her manuscript development knowledge by revising the FICs manuscript draft. Leila Guarnieri learned to manage and coordinate the volunteers through different project activities.

d. *Increased communication and networking skills:* Ph.D. Luciana Castronuovo has gained the ability to manage research grants and develop networking with other organizations. Camila Chidiak, director of the communication department of FIC Argentina, gained new expertise in developing visual material for results dissemination. Camila was part of all the research process regarding focus groups with teenagers. There was a strong collaboration among the food policy department and the communication department that was crucial for developing the script for the videos and the dissemination strategy.

Bolivia

The outputs obtained to date are shown next:

- An analysis of Bolivian regulations on food marketing that compares Bolivian regulations with those of other countries in the region. This includes a protocol for searching for information.
- A qualitative document with the mapping of actors and the analysis of their perceptions on the research topic.
- Report on the quality and nutritional content of foods advertised in traditional and alternative media, aimed at children (still under construction).
- Final report of the study "Diet, physical activity and television exposure in times of COVID-19"
- Document with the results of the analysis of food advertising aimed at children and adolescents found in open signal and cable television.
- Preliminary and final results of the analysis of knowledge, attitudes, and practices of parents and caregivers of children and adolescents regarding the influence of food advertising, were disseminated in the Ministries of Health, Education, Technical Committees of Food and Nutrition, Vice Ministry Defense of the Consumer, Education, Mayorships, and others.
- Organization of the final event of the project, with the presence of UNICEF, OMS/OPS, IDRC, and other governmental and non-governmental organizations from the four countries where the project was carried.
- The dissemination efforts are shown next:

Name of the event: **Food Marketing Targeted to Kids: A collaborative and policy-oriented study in Argentina, Bolivia, Guatemala and Peru**

Place:	Lima Peru
Organized by:	Universidad de Lima
Date:	January 30th, 31st 2019

Name of the event: **Fair to commemorate the day in La Paz Francophonie**

Place:	La Paz, Bolivia
Organized by:	Alliance Francaise in Bolivia
Date:	March 2019
Name of the event:	**Scientific Committee for camping in the process**
Place:	La Paz, Bolivia
Organized by:	FIC Bolivia
Date:	December 2018
Name of the event:	**Meeting of Scientific Committee**
Place:	La Paz, Bolivia Virtual Meeting
Organized by:	FIC Bolivia
Date:	February 2020
Name of the event:	**Closing meeting of the project "Food Marketing Targeted to Kids"**
Place:	La Paz, Bolivia
Organized by:	FIC Bolivia
Date:	August 2020

Closing meeting

The closing meeting of the project was initially scheduled as an in-person meeting in La Paz – Bolivia. However, due to the COVID-19 pandemic, the meeting was conducted online on August 13th and 14th, 2020, using a paid version of the virtual conference platform Zoom.

It gathered 75 invited countries of the Consortium, with the support of a Facilitator, who during the two days of the event helped its realization, and was divided into three steps: 1. Meeting preparation, 2. Meeting realization, and 3. Evaluation.

Step 1: Meeting preparation

The planning of the meeting was conducted taking into account the following questions:

- Why? The objectives and the context of the meeting
- Who? The target group and people
- What? Contents.

- When? Date and time.
- Where? Platform

In this sense, the following was agreed:

Objective and the context

The objectives of the meeting are:

- To disseminate the results of the project as a Consortium.
- To support and promote public policies through scientific evidence generated by the Consortium.

Target group

Public decision-makers, international cooperation, civil society organizations, and universities.

Contents

The speakers and contents were selected by the organizers. These are the following:

- Regional advances in the regulation of food marketing targeted to children and adolescents. "Advances of the food marketing regulation in the Americas"
- Project Contextualization (Consortium) and presentation of global results of the project. Food Marketing Targeted to Kids: A collaborative and policy-oriented study in Argentina, Bolivia, Guatemala and Peru

Step 2: Meeting development

1. ***Day 1 Presentations:***

Fabio Da Silva Gomes (Regional advisor in Nutrition and physical activity OPS)

Mr. Da Silva shared the advances in the regulation and deregulation of food marketing in the Americas, focusing on the indicators found in the Action Plan to Prevent Obesity in Children and Teenagers, from 2014 to 2019. Most of the countries have only focused on the regulation of advertisements inside the schools and have not been able to regulate other media, as recommended. OPS collected survey information from 16 countries about the implementation of such regulations. Eleven of these countries answered that they had a unit responsible for the monitoring of advertising. Factors of success were identified in the countries that have reached broad and robust legislation, as well as the obstacles, the possible roads for action, and opportunities.

Peter Busse (Research coordinator – Universidad de Lima)

Mr. Busse addressed the public policy contexts in the four countries, how the results of the studies conducted were contextualized in regards to these policies, the conceptual framework, the design of studies, and the specific recommendations for each country.

During the last part of the meeting, an expert panel answered questions of the participants.

2. Day2 - Consortium plenary:

Step 3: Conclusion of the meeting

The facilitator showed a projection for each country to analyze the next steps to be taken by the Consortium, which are focused at a regional level.

Christian Arce Vargas

Mr. Vargas started the second day of the event, making a summary of the previous day, focusing on the key aspects discussed in the meeting and the questions made by guests.

Lucila Rozas Urrunaga

Ms. Rozas made a compilation of the more important aspects considered for the next steps of the Consortium, based on three themes:

- Research
- Public policy
- Public advocacy

The summary and conclusions were gathered by Mrs. Alejandra Karina Garrón. Roberto Bazzani made the closing remarks of the event.

Perú

Our initial output and dissemination plan considered two main project outputs: 1) a peer-reviewed journal article for each of our three studies and 2) a policy brief synthesizing results from our three studies, which will be disseminated among relevant stakeholders at the state level, the society level, and the media. At the time, we have made important progress regarding the two main outputs, and we have developed relevant dissemination activities.

- **Outputs:**
    - The draft manuscript for the study related to specific objective 7 was submitted to the peer-reviewed journal *Appetite*. The draft manuscript for the study related to specific objective 8 is also finalized and final revisions are being made, before being sent for consideration to a peer-reviewed journal. Finally, we have also collaborated with the team in Guatemala in the write-up of a short report for the study linked to specific objective 9, which has been sent for consideration to the peer-reviewed journal *Critical Public Health*.
    - We created a media literacy intervention for private and public schools aiming to strengthen schools' efforts to prevent childhood obesity.
    - We have developed and designed a policy brief document that will be shared with a list of national stakeholders once the manuscripts of our studies are published (See Annex 3 with PDF document with the title "Peru - Policy Brief").
    - The team from Peru, together with the teams from Bolivia and Guatemala, co-authored a proposal that involved managing and curating the data that resulted in the study linked to specific objective 9, which obtained an IDRC Open Data grant in July 2019 (see grant n° 109059-020). This data has already been curated and uploaded to the *openICPSR* repository (see Rozas et al., 2020) for public consultation; moreover, a data descriptor, detailing how the data was obtained, has been sent for consideration to the data journal *Scientific Data*.

- The team in Peru was in charge of developing, together with the help of members of the teams in Argentina, Bolivia, and Guatemala, a research proposal that aims to design and validate a methodology for monitoring and evaluating the digital marketing strategies of multinational fast-food brands in response to the COVID-19 pandemic. The proposal was approved by IDRC in July 2020 and developed between July and September 2020. MSc Lucila Rozas Urrunaga, the project coordinator in Peru, was actively involved in the development of the qualitative and quantitative data gathering tools for this new objective, which is a central part of the methodology.

- **Information sharing and dissemination:**
  - A summary of the project has been included in the Research Project Catalogue developed by Instituto de Investigación Científica (IDIC) of Universidad de Lima. This catalog is aimed to showcase the projects that are being developed in the institute, to bring visibility to the researchers involved in the projects and it is targeted to relevant stakeholders and possible collaborators outside the institution. This catalog can be found in Annex 4 Peru.
  - The results of the studies linked to specific objective 7 and specific objective 8 have been presented to the school principals and teachers in the schools where the data was collected. In particular, one of the schools that participated in the study linked to specific objective 8 showed interest in the results and proposed to continue the collaboration, to sustain the effects of the intervention that was implemented with students; the school also suggested to involve parents in the research process. However, the collaboration was put on hold due to the COVID-19 pandemic.
  - An event on food systems, targeted to stakeholders and scholars and hosted by Universidad de Lima, was co-organized by members of the team, as well as by other colleagues from FAO and CRONICAS, a research center affiliated with Universidad Peruana Cayetano Heredia. Also, in this event, Boyd Swimburn, a worldwide-known scholar in the field, presented his work. Thus, the event served mainly as a platform to showcase and raise interest in the results of the study related to specific objective 7. Information about this event can be found next:
    https://www.ulima.edu.pe/instituto-de-investigacion-cientifica/noticias/fomento-de-los-ambientes-alimentarios-saludables
  - The principal investigator of the project was invited to give a presentation at INDECOPI, the state institution in charge of receiving, investigating, and sanctioning breaches by the industry, of the restrictions on food marketing targeted to kids, contemplated in the Law N° 30021. Some of the main lessons derived from our studies were commented on and will help inform the decisions regarding the cases where breaches of the law were denounced.
  - A blog post that briefly presented some information about the project was written by the principal investigator and research coordinator and then published on the webpage of the Institute of Scientific Research (Instituto de Investigación Científica-IDIC) of Universidad de Lima. The post can be found next:
    https://www.ulima.edu.pe/en/node/18125

- **Training**
  - A one-day gender-training workshop was imparted to the four country-project participants during the first meeting in Lima, January 2019. This led us to critically revise our research protocols and dissemination strategies to include an intersectional approach. Slides from this session can be found here: Link to slides here

- **Capacity building**
  - *Institutional reinforcement:*
    - During the first project meeting in January 2019, and as a result of the mid-term evaluation, the project participants envisioned a plan to create an international research consortium, identifying collaboration instances for the short and medium terms that would guarantee sustainability over time and reinforce our research network. Some of the short-term actions defined are currently being implemented: 1) establishing a common research agenda; 2) developing a virtual library with relevant literature and national and international regulatory frameworks; 3) sharing research protocols among participants and 4) providing relevant feedback regarding the studies being implemented in each country. Link to slides here
    - Consolidation of the research collaboration between the participating institutions of the project "Food Marketing Targeted to Kids" took place in two opportunities. One of these opportunities was given by the reception of the IDRC Grant N° 109059-020 (Open Data), which involved a joint proposal among Bolivia, Guatemala, and Peru for curating and managing data that was obtained in the study linked to specific objective 9. The second opportunity was given by the presentation of a joint proposal to IDRC for a new study that addresses digital food marketing in the COVID-19 context, in which the institutions of Argentina, Bolivia Guatemala and Peru are participating.
    - In August 2020, during an internal workshop aimed at evaluating the project development, the research consortium formed by the four participating institutions decided to continue with collaboration by preparing joint proposals for external funding. The objective was to move forward with a common research agenda in food systems and food marketing, as well as with incidence activities aimed to influence changes in public policy in each of the participant countries, and at a regional level.

  - *Increased research and/or administrative skills:*
    - MSc Rozas has been able to develop the necessary skills to successfully organize the project's logistics, financial expenses, and research activities, as this is her first experience coordinating an international project with IDRC funds. Furthermore, the activities involving the study linked to specific objective 7 and specific objective 8 challenged her coordination and negotiation capacities (since much of the work involved external actors), as well as her abilities to conduct workshops

targeting adults and to organize surveys with a big sample. This experience has strengthened Ms. Rozas's research and managerial abilities. Finally, Ms. Rozas was able to strengthen her capacity for methodological design by developing, together with Ms. Sophia Mus, from Fundación Aldo Castañeda, a qualitative content analysis tool for the new objective aimed to design and validate a methodology for monitoring and evaluating the digital marketing strategies of multinational fast-food brands in response to the COVID-19 pandemic. This tool was taken as a basis for the development of a validated quantitative analysis tool, where Ms. Rozas was also one of the co-authors.

- The research assistants involved in the project improved their qualitative data analysis skills, as they received training on the development of qualitative content analysis tools, as well as the use of CAQDAS software NVIVO for data analysis. Some of them also strengthened their skills in qualitative and quantitative data collection, as some of them used observation guides or conducted surveys for the first time.

- *Increased communication and networking skills:* MSc Rozas Urrunaga has been able to develop the necessary skills to successfully communicate information regarding the project to both academic and technical audiences. Moreover, she has improved importantly her capacity to connect with other scholars, final users, and policymakers, that will be interested in collaborating further with related research activities.

- *Development of skills for curation, managing, and sharing of open data:* both MSc Lucila Rozas and Ph.D. Peter Busse developed new skills regarding the managing, curating, and sharing of Open Data. This happened thanks to receiving the IDRC Grant N° 109059-020 (Open Data), which involved a joint proposal by the institutions of Bolivia, Guatemala, and Peru, that implied curating and managing data that was obtained in the study linked to specific objective 9.

Guatemala

- For objective 9 of the project, to assess the representation of gender in food and beverage advertising in bodegas around public schools, Lucila Rozas from Peru and Sophia Mus have written a manuscript. The process of writing was guided by Peter Busse and Dr. Barnoya. The manuscript was adjusted and submitted to journal Critical Public Health.
- Objective 10 of the project, to determine the strategies used by the food and beverage industry to place point-of-sale advertising and other marketing strategies in bodegas around public schools, Aiken Chew wrote a manuscript alongside Dr. Barnoya, Dr. Peter Roloff, and Sophia Mus. This manuscript was submitted to the Journal of Environmental Nutrition and Hunger.
- For objective 11 of the project, to compare the Food Retail Environment Index between three neighborhoods of different socioeconomic status in Guatemala, a manuscript was submitted to the CDC Preventing Chronic Disease Journal that has a section called GIS

Snapshots, which uses geographic information systems as an innovative tool to enhance surveillance that will prevent chronic diseases and promote healthy practices. This article was published and is available at https://www.cdc.gov/Pcd/issues/2020/20_0029.htm

- Dissemination plans are to be considered in the following months. Due to the pandemic COVID-19, dissemination through media may be a challenge, and risks of poor media coverage might be encountered.

Outcomes:

Objective	Year	Outcomes
Gender representation in printed media	Year 1	- Project management and administration have been a continuous learning experience for SM, MD, project coordinator, under the guidance of Dr. Barnoya. - SM has also had the opportunity to develop the instrument for gender assessment alongside marketing experts - SM has also broadened her network with researchers of the ongoing project. - SM learned to manage and coordinate teams through the different project objectives
	Year 2	- SM has also strengthened her writing skills through the preparation of IDRC´s technical and final report. - SM has had the opportunity to work with more experienced colleagues gaining a better understanding of the development of manuscript writing
Store proprietors and distributors	Year 1	- AC underwent the course of ethics in human research to access a certificate - AC learned about the process of how to submit a protocol to an IRB - Improved AC interview abilities - AC improved abilities to research urban settings - AC improved his approach to work as a team - GA improved her transcription skills
	Year 2	- AC learned how to use Deedose software - AC improved coding abilities on qualitative data - AC learned how to calculate the Kappa index when coding qualitative data - AC improved his ability to write in English - AC expanded his scholar network when he collaborated with Peter Roholoff and Peter Busse - SM strengthen her manuscript development knowledge by revising AC´s manuscript drafts - AC learned the process of how to publish in a peer-review journal (Journal of Hunger and Nutrition Environment) - AC learned how to explain the coding process to GA

GIS Snapshot Food environment in three territories of Guatemala	Year 1	- AC improved the skills in managing geographic information - AC improved his skills to manage GIS software analysis - AC learned about foodscape literature and methods
	Year 2	- AC learned the process of how to publish in a peer-review journal (Chronic Disease GIS Snapshot – Preventing Chronic Disease) - AC expanded his scholar network when he collaborated with Alyssa Moran - AC learned how to coordinate dissemination meetings with a Guatemalan newspaper (eP podcast)
Schools and food and beverage industry	Year 2	- AC improved his ability to submit research protocols to IRB - AC improved his ability to coordinate research activities - LS improved her interviewing skills - LS improved her transcription abilities - LS learned the basics of coding - SM was able to help LS improve her skills in database preparation for quantitative analysis - SM was able to learn through the process of helping LS in a better understanding of result presentation for quantitative data - AC and LS improved their descriptive statistics knowledge - LS learned how to use Dedoose software - LS learned how to structure findings for reports and articles - AC and LS learned on the subject of school commercialization.
Methodology to evaluate marketing strategies during the pandemic COVID -19		- SM has learned and improved her coding abilities through the qualitative part of this objective. - SM worked and participated actively in the development of the instrument to evaluate marketing strategies during the pandemic - SM has strengthened her knowledge and understanding of marketing strategies through social media

Impact

The next subsections briefly describe and assess any development impact that the project had so far and that it is expected to have, by country.

Argentina

The overall expected impact of this project includes an increase in the knowledge about food marketing to children from a gender perspective. This project aims to contribute to the inclusion of a gender perspective in the research agenda. In conducting this project, we will also build capacity among a community of researchers to include a gender perspective in research projects. Also, this knowledge may contribute to include a gender perspective in policy design.

The dissemination of the visual material helped to increase awareness in the general public about the importance of regulating food marketing to children. Also, it was an opportunity to target teenagers as a specific audience and increase the visibility of the relevance of regulating unhealthy food in this specific group. The results of the focus groups will be relevant for the design of public campaigns targeted to teenagers and understanding teenage responses to food marketing. The results of the research will also be of theoretical value. The results will give new insights to discuss different concepts that are crucial to understanding teenager's exposure to food advertising (for example, susceptibility to advertising, gender differences, etc.).

The dissemination strategy was successful in terms of visibility and was relevant for advocacy purposes.

Bolivia

The expected impact of the project is related to the positive effects it might have on the development of public policies in Bolivia, whether at the national, departmental or municipal government level, for the control and restriction of food marketing aimed at children and teenagers, as Bolivia regulations aimed at this aspect.

Given the fact that this type of research is unprecedented in Bolivia, it is expected to have an important impact on stakeholders at the national and international levels, as it can provide evidence for supporting a reform of the regulations related to Law N° 775.

The project received the acceptance and interest of the authorities of the Ministry of Health, Ministry of Consumer Defense Rights, technical committees, the academic community, international organizations, and civil society. Additionally, the creation of the scientific committee for research monitoring and evaluation committee, together with other institutions, has become a space of dialogue, discussion, and political incidence, which is highly positive for the visibility of the consortium and the research developed in Bolivia, as part of this project.

Perú

In the case of Peru, this project aimed to allow a better understanding of the environmental factors that influence children's and adolescents' consumption of unhealthy foods, considering a gender perspective, as well as age and socioeconomic differences. It also included identifying strategies to modify the factors influencing children's and adolescents' consumption of unhealthy foods. Regarding this, we expect that the results of the studies have impacts on the following matters:

- In the implementation of information campaigns regarding healthy eating and consumer rights, aimed at parents and children.
- In amendments to the Law N° 30021, for it to include measures that regulate the food environment around schools, as well as the food offered inside schools, which continues to provide access to "artisanal" LNED food products. The study related to specific objective 7 has shown that, even when the law is being progressively implemented in schools, children still do not find themselves in optimal food environments inside and outside the school. Thus, this study has the potential for scalability at a national policy level.
- In the integration of media literacy in the content of the school curricula, to reduce the effects of food advertising in children and adolescents. Even though the intervention we developed for the study related to specific objective 8 had limited effects, some of them showed important changes in advertising literacy beliefs related to selling and persuasive intentions by the food advertisements. The evidence of this intervention, which would be strengthened by taking into account the lessons learned, as well as the suggestions of teachers who applied it in their classrooms, can be presented as a successful experience to policymakers to make a case for its wider adoption.
- In the transformation of female and male representations around food in the media, especially in point-of-sale (POS) advertising. Regarding this, we have found that although most of the POS advertisements we analyzed do not seem to have a clear gender representation, the ones that do, reinforce traditional gender roles and stereotypes linked to certain products. This knowledge can be used in advocacy actions related to consumer rights and can be implemented in policies regulating food marketing, both Peru and Guatemala.

Although the project has not yet been covered on mainstream media, once the studies are published, we expect to disseminate the results among a targeted group of stakeholders, as well as in the press, with the help of the communications team of the University of Lima.

However, so far, one of the schools where the research took place was interested in greater collaborating with future interventions that could allow us to expand the media literacy study and to make it more scalable. Regarding this, Chilean researchers from the Universidad Bernardo O'Higgins were also interested in replicating the media literacy study in their country. Nonetheless, these two possibilities have been indeterminably postponed due to the current pandemic context.

Guatemala

Part of the study results was presented in a podcast with one of the most recognized newspapers of Guatemala - elPeriódico. It had the following impact: Youtube: 96 views, Facebook: 12,000 views / 26 comments / 230 reactions.

Links:

- Youtube: https://www.youtube.com/watch?v=n8mGHnMh7hM&feature=youtu.be
- Facebook: https://www.facebook.com/watch/live/?v=449544509319069&ref=watch_permalink

This project will generate important evidence to support local and regional policy changes that will shape marketing strategies and approaches. The results of this project´s aims shed light on the interaction between store owners and schools with the food industry.

The results of this project also improve our understanding of foodscapes and open doors to future research, as it would be important to understand the industry´s perspective, and in this way evaluating the whole scope surrounding foodscapes.

Recommendations

Bolivia

- Given that this type of research provides the necessary input to support the generation of public policies that restrict the advertising of unhealthy foods and non-alcoholic beverages, thus impacting in the health outcomes of the population, it is necessary to continue with future projects and programs that built upon the results of this project. It is important to consider the generation of further evidence in countries such as Bolivia, where data about the effects of food marketing on the health of children and the overall population is scarce.
- Maintaining permanent dialogue spaces with different stakeholders, such as the scientific committee established in Bolivia, is key to escalate the impact of the research on food marketing and food environments. The development of capacities for such incidence activities should be encouraged in other members of the Consortium that need to strengthen this aspect.
- As a general recommendation, members of the Consortium need to be aware of the particular junctures where aspects related to food marketing regulations and laws are discussed, to identify opportunities for making alliances with stakeholders and for disseminating the results of our studies. In the case of Bolivia, this has been particularly important, as relevant state authorities can generate more evidence to push for the modification of Law N° 775 and other related policies.

Peru

- We consider that, as a consortium, it is important to continue generating evidence regarding food marketing policies, especially in the case of countries that do not have specific laws or regulations. Moreover, in cases where laws and regulations exist (at the national, subnational, and local level), we believe it is important to take this as a starting point for developing evidence that can allow for making direct incidence on the formulation of more comprehensive policies.
- For future projects, it is key to start developing evidence on food advertising and digital media, that will allow improving existing laws that are in place to regulate food advertising. This can also help the national agencies in charge of sanctioning advertising practices that challenge the law, to have tools to sanction incorrect practices of the food industry. This demands the development of new research skills for the teams in each of the countries of the Consortium.
- Also, for future projects, it is key to implement an approach of food systems, that takes into account the impacts of the practices of the food industry, its environmental impacts, and the impacts on the health of targeted populations.
- Studies with the participation of civil society and public institutions, aimed at setting up an intense collaboration from the start of a future project, should be encouraged. This would increase the possibilities of having a greater and more direct impact on public policies, as well as in society at large.
- It is necessary to be able, as researchers, to respond to the current context (COVID-19 pandemic) promptly and to be able to adapt our research to the most immediate needs of our countries and the Latin American region in general.

- We need to strengthen the skills of our research teams within the Consortium to manage both traditional and digital media outlets, in order to amplify our messages and our impact on public opinion.
- Future research developed by members of the Consortium should include, from the design, a gender perspective. Research should be formulated taking into account that some aspects of food marketing could affect target populations differently, depending on gender.

Guatemala

- For future projects on gender preferences, the team advises on involving a multidisciplinary team. This would enrich and broaden the construction of instruments or protocols to assess gender.
- Gender representation in ads is a field where more research is needed to better understand the impact of gender-oriented marketing.
- For future research in corner stores, the research team advises that participant observation and ethnographic research design is most appropriate since the store owners are a close group difficult to access. Corner stores need further qualitative research because they are a central part of community and neighborhood life.
- The research team advises that using GIS technology to collect data is a powerful way to decipher access, exposure, and proximity elements of a food landscape. This should be combined with the perception of customers and store owners with other qualitative methods.
- Guatemala must do more studies related to the food environment and how it operates both in the urban and rural areas.
- In Guatemala, it is necessary to identify how the UPF industry has permeated different places where consumers obtain these products.
- It might prove powerful to retrieve data at the micro-level doing ethnography in corner stores, warehouses, *comedores,* to collect the interaction and perceptions of the different players in the food environment.
- The health policymakers can learn and decide how to implement zoning laws to regulate the access of the UPF industry and its products.

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Annex 1. Tracking program level indicators

INSTRUCTIONS: Please provide answers to the questions below based on actual achievements and outcomes. If this is the first time you are completing this questionnaire, please include all achievements since the inception of the project. If you have submitted this questionnaire in the past, please add any new achievements or progress since your last report. In some cases, your responses to these questions may repeat achievements mentioned earlier in the technical report. If this is the case, please extract (copy and paste is acceptable) the information here. Please keep your answers brief, limiting to one to two paragraphs per question. Projects are not expected to document achievements for each of the questions; it is normal that some questions may not apply to your project and remain blank.	*This column left blank for internal purposes*
Please provide identifying project information below:	
Project number: 108645-001 **Project title: "Food Marketing targeted to kids: a collaborative and policy-oriented study in Argentina, Bolivia, Guatemala and Peru"** **Date this report was prepared: October 20th, 2020**	
1a. What innovations is your project testing, assessing or adapting to reduce the burden of chronic or infectious diseases? A definition of an innovation is provided in the footnotes for your reference.[7] If your project has been contributing to multiple innovations, please describe them individually.	Ind. #2
Please describe briefly (limit to 1-2 paragraphs) **Argentina:** Women and men have different levels of exposure and vulnerability to NCD risk factors. However, a gender perspective is not usually included in policy-oriented research, nor in policy design. The inclusion of a gender perspective is considered an innovative approach in policy-oriented research in NCDs policies. **Bolivia**: We headed the formation of a Scientific Committee for incidence purposes consisting of the following bodies: Chamber of Deputies (Committee on Education and Health), Ministry of Health, Deputy Minister of Consumer Protection, Unit Coordinator of the Technical Committee of the Council of Food and Nutrition (CT-CONAN), Self-Government Department of La Paz (S, Autonomous Municipal Government of La Paz, Universidad Mayor de San Andrés (Faculty of Medicine),	7

[7] Innovations can be understood as new and significantly improved ways of doing or organizing something, and include the adaptation of existing products or processes to new contexts. They include: products (a market and/or publically distributed good); processes or practises (a new method, skill or behaviour that creates positive change); programs (organizational arrangements or system of services that meets a need for a defined community). Examples of innovations related to reducing the burden of infectious and chronic diseases could include testing: the use of screens in preventing Dengue and other Aedes mosquito transmitted diseases; the potential of community kitchens to provide healthier meals to low-income populations; applying a new methodology to assess food policies and food environments.

Public University of El Alto (Academic Coordinator), University Franz Tamayo, National Association of Nutritionists and Dieticians of Bolivia, and UNICEF. **Peru**: We developed a media literacy intervention that is age and gender appropriate to help children and adolescents develop critical thinking regarding food marketing. Although the effects of the intervention were limited, some important results have been found for primary and secondary school children. This points to the need of continuing strengthening this innovation to encourage adoption at a greater scale, through the involvement of end-users and target population (school teachers, parents, children, and adolescents). Moreover, this intervention has shown potentiality for replication and adoption in different contexts other than schools in Lima, Peru. **Guatemala:** Marketing is one of the main sources of influence on people´s eating behaviors. Gender oriented marketing strategies in printed media are scarcely addressed in the literature. Through a collaborative process with a marketing agency, we developed, an instrument to assess gender in printed media. Using a GPS device, we mapped the food environments in Guatemala city and rural Chisec, an indigenous community. Through this method, we were able to shed light on the proliferation of food swaps, and SES disparities. This evidence can impulse and shape new policies to improve foodscapes. **Argentina, Bolivia, Guatemala, and Peru:** As a project extension component, we validated a methodology to analyze the digital marketing strategies of the food industry in the context of the COVID-19 pandemic. This is an innovation, as to the moment, there are no suitable methodologies that can capture the adaptation of the food industry to the rapid changes in consumption created by the pandemic context and, thus, the changes in the food environment itself.	
1b. Of the innovations described in 1a), have any of them been applied at scale? For example, has the innovation been adopted for wide-scale use by a large population, by government, or applied in different contexts, countries, or markets? Explain how this innovation is being applied at scale and what processes have enabled wide-spread use and/or scale-up.	Ind. #3
Please describe briefly (limit to 1-2 paragraphs) **Not applicable**	0
1c. Approximately how many individuals are benefiting from the innovation?	**Ind. #3**
Please indicate the approximate number of beneficiaries, if this information is known **Unknown**	
2. Is your project assessing policy effectiveness? If yes, please list and briefly describe what policies the project is assessing, and briefly comment on the relevance and potential impact.	Ind. #4
Please describe briefly (limit to 1-2 paragraphs) **Argentina:** The current project is not assessing policy effectiveness. In Argentina, there are no food marketing regulations. This project will gather local evidence to	2

support the promotion of effective food marketing regulations considering a gender perspective. **Bolivia:** The regulatory and legal framework in Bolivia, related to food marketing aimed at children and teens was analyzed. In this sense, the following legislation has been identified, reviewed, and analyzed: Political Constitution of the Plurinational State of Bolivia; Law No. 775 "Promoting Healthy Eating"; Law No. 622 "Complementary Feeding School"; Law No. 070 Avelino Sinani Elizardo Pérez"; Law No. 453 Rights of Users and Consumers; and Supreme Decree No. 28667. **Peru:** The current project is not assessing policy effectiveness. Nonetheless, some of the findings of the studies stressed the importance of implementing effective information campaigns and interventions targeting parents and children so that they can be aware of their rights as food consumers. Moreover, the qualitative study revealed the need to modify some aspects of the Law N° 30021, as it pointed to the existence of an unhealthy food environment around schools that is not regulated.	
3a. List and describe the key activities/mechanisms your project engaged in to inform/influence practice or policy (e.g. multi-stakeholder and community processes, participation in policy dialogues or policy-setting processes, engagement in making policy recommendations, or other relevant actions).	Ind. #5
Please describe briefly (limit to 1-2 paragraphs) **Argentina:** FIC Argentina submitted a shadow report to the UN Committee on Economic Social and Cultural Rights (CESCR), which stressed the government's obligation, as found in the National Constitution, to protect people's health, particularly regarding obesity and tobacco control. The report includes recommendations for public policy. One of the recommendations was to regulate and restrict the marketing of unhealthy food and beverages. FIC Argentina launched a dissemination campaign on the impact of junk food marketing among adolescents. This action is aimed at promoting front-of-package labeling warnings in Argentina as a fundamental policy to stop ultra-processed food marketing, misleading advertising, and to guarantee consumer's right to information. **Bolivia:** There have been three actions implemented regarding this aspect. 1) The formation of a Scientific Committee, made up of various Bolivian institutions, which aims to be a space for technical cooperation and promotion. 2) Participation in a fair to commemorate La Francophonie Day in La Paz. This was a good opportunity to spread the research project to the population that attended the fair. 3) Created a space for dialogue between the Government and Civil Society, to accompany research and initiatives such as this project **Perú:** An event on food systems, targeted to stakeholders and scholars and hosted by Universidad de Lima, was co-organized by members of the team, as well as by other colleagues from FAO and CRONICAS, a research center affiliated with Universidad Peruana Cayetano Heredia. This served mainly as a platform to inform policymakers and other relevant stakeholders about the results of one of our studies. Moreover, the principal investigator of the projects participated in a dialogue with INDECOPI, the state institution in charge of receiving, investigating, and sanctioning	4

breaches by the industry, of the restrictions on food marketing targeted to kids contemplated in the Law N° 30021. He presented evidence that the institution could make use of to resolve the cases where there was an alleged breach of such law.

3b. Have any of the efforts described in 3a) contributed to new practices or policies *being implemented* or *existing policies/practices being changed* based partly or wholly on the work of the project? How were strategic stakeholders involved in these processes? Ind. # 5

Please describe briefly (limit to 1-2 paragraphs) 2

Argentina: The CESCR has recommended that Argentina implement effective public policies to reduce the consumption of unhealthy foods and strengthen the link between NCDs prevention and human rights. They recognize the necessity to promote public policies to control NCDs risk factors as an effective tool to protect the right to health. In addition, the observations can help to promote effective legislation to reduce the impact of tobacco, obesity, and overweight epidemics in Argentina, including the recommendation for restricting food advertising to children.

Bolivia: The Vice Minister of Consumer Defense Rights, motivated by the results of the research developed by FIC Bolivia, is currently drawing up standards and regulatory plans for misleading food advertising aimed at children and adolescents.

3c. What was the level of jurisdiction of the policy/policies implemented or changed? Ind. 5

Choose an item.

	Identify the policy *e.g. regulation of TV food advertising to children in Peru*	**Select level of jurisdiction** 1= local/municipal/district 2= provincial/sub-national 3= national 4= multinational/international
1.		
2.		
3.		

4a. Did your project intend to specifically benefit women, men, boys or girls or a marginalized group? Ind. 3

Please place an x in the box corresponding to the target group:

Choose an item.

Intended to benefit mostly men/boys	
Intended to benefit mostly women/girls	
Intended to equally benefit women/girls and men/boys	x
Intended to primarily benefit a marginalized group (name of the group): Mayan indigenous (Guatemala), low-income children and adolescents (Peru)	x

No intentional focus on gender or a marginalized group	
Not applicable	

4b. Did you investigate how sex, gender, age, education, income, ethnicity, social standing, or other social determinants impact the health of your target population? What did you do to address these factors (for example: collecting disaggregated data, conducting gendered analyses, considering differential impacts to women, men, girls, and boys, using participatory research approaches, etc.)? How did these approaches influence the results and impacts (e.g. research, policies, and innovations)?	Ind. 6
Please describe briefly (limit to 1-2 paragraphs) **Argentina:** The gender perspective is included in both objectives conducted by FIC Argentina. The narrative review aims to address the main discussions around food marketing to children and gender. The focus groups with teenagers addressed how different gender perceive food marketing in traditional and non-traditional media. **Bolivia:** The focus groups evaluated how food advertising to children may have different effects on different social sectors, and this input will be essential to promote equity-based policies. At the local level, this study will provide strategic information that will be used to promote a comprehensive policy that supports the regulations for restricting advertising directed at vulnerable segments such as children and adolescents, considering the dimensions of equity and the gender that allows it. Since it is a descriptive and unique study due to its characteristics in Bolivia, it will be the baseline for measuring the effectiveness of public food policy, as well as determining the existence of positive or negative gender stereotypes in advertising aimed at consumers. **Peru:** Gender, income, and age are three factors present in the studies corresponding to the two specific objectives for Peru. These have been considered to develop the methodology for collecting and analyzing data for the study corresponding to Specific Objective 7. Gender and age have also been taken into account in the development of the media literacy intervention for the study corresponding to Specific Objective 8. **Peru and Guatemala:** The shared objective between Guatemala and Peru assessed gender through an evaluation of marketing around schools. An instrument to evaluate gender was created and variables deemed to be gender-oriented were identified. These included the gender of the main character; focal point; scales; number and gender of the persons in the ad; and product representation. Future research can focus on assessing these variables more closely.	10
5. Did your project include economic analyses/modeling (e.g. costing, cost-benefit analysis, etc.)? If yes, what was the purpose of including these elements and how are they contributing to achieving your project objectives?	Ind. #1
Please describe briefly (limit to 1-2 paragraphs)	0

Not applicable

6. List all *peer-reviewed* articles that your project has published? Please do not include other types of publications here. Ind. #11,12

Please list:

	Title	Journal name	Primary author	Open access (Yes/ No)
1.	Food Swamps Surrounding Schools in Three Areas of Guatemala	Preventing Chronic Disease. GIS Snapshots	Aiken Chew	Yes
2.	Gender representation in food and beverage print ads of corner stores in Peru and Guatemala	Critical Public Health	Sophia Mus	Yes
3.	The foodscapes of children and adolescents attending schools in Lima, Peru	Appetite	Lucila Rozas	No
4.	Assessing the effect of an advertising literacy intervention in Peruvian schools	Journal of Children and Media	Peter Busse	No
5.	Narrative review of studies of food marketing and gender. Challenges for researching with a gender perspective	Nutrition Journal-BMC	Luciana Castronuovo	Yes
6.	Publicidad de alimentos no saludables dirigidos a adolescentes: perspectivas de los y las adolescentes	Archivos de Pediatría	Luciana Castronuovo	No
7.	The relationship between corner stores and the food and beverage industry in Guatemala: Stocking, advertising and trust	Journal of Environmental Nutrition and Hunger	Aiken Chew	Yes

1

7. Have individuals involved in your project accomplished one of the following achievements listed below, due in part to their involvement in this project? Is yes, please list the name and sex of the individual and describe the Ind. #10 a, 10b, 10c

accomplishment. Indicate if any of these individuals are Canadian placing an 'x' in the box labelled 'CAD'.

a) received awards and other honours;
b) influenced or advised policies;
c) expanded the adoption of effective practices, including in new settings/populations;
d) other significant achievements

Please list:

	Name	Female/ Male	CAD	Brief description of accomplishment
1.	Belen Ríos	female		FIC Argentina with other organizations submitted a shadow report to the UN Committee on Economic Social and Cultural Rights (CESCR) which includes recommendations for public policy including the need to regulate and restrict the marketing of unhealthy food and beverages. The CESCR included the recommendations in their observations to the Argentinian State.
2.	FIC Argentina	Female		During the conduction of this project, we have had meetings with different policymakers who are working on bills to promote marketing restrictions in the context of front-of-package labeling policies. We have revised 16 bills and we had meetings with 10 decision-makers from the National Legislative Branch.
3.				
4.				
5.				
6.				

2

8. Has your project supported any Masters students, PhD students, or post-doctoral fellows? If yes, please list the name, sex, and nationality of the individuals, and their status as Master's students, PhD students or post-docs. Indicate if any of these individuals are Canadian by placing an 'x' in the box labelled 'CAD'.

Ind. #8,9

Please list:

	Name	Female/ Male	CAD	Master/PhD/Post-doc
1.	Analí Morales	Female		Master
2.	Leila Guarnieri	Female		Master
3.	Belén Beltramo	Female		Graduate student

2

4.	Sofía Gatica Miles	Female		Graduate student
5.				
6.				

9. Has your project or its findings been cited in the media? Please provide the title of the media citation and an accompanying web-links for the *most relevant* citations *linked to important achievements of the project*.

4

Please list:

	Title	Description in English (optional)	Website link
1.	Coca-Cola, un sponsor poco saludable	Different organizations signed a declaration where they declare that marketing strategies, including the Sports Sponsorship by junk food companies, are an important determinant of consumer choices and that children and adolescents are particularly vulnerable to this type of advertising. In the context of this Declaration, a mass campaign was designed. This article is part of that action	http://revistacitrica.com/esponsor-poco-saludable.html
2.	Global Health Activists Are Against Coca-Cola Sponsoring Youth Olympics. Here's Why	Different organizations signed a declaration where they declare that marketing strategies, including the Sports Sponsorship by junk food companies, are an important determinant of consumer choices and that children and adolescents are particularly vulnerable to this type of advertising. In the context of this Declaration, a mass campaign was designed. This article is part of that action	https://thewire.in/health/coca-cola-youth-olympics-2018.
3.	Front-of-package labeling warnings to	FIC Argentina launched a dissemination campaign	Etiquetado frontal: la herramienta para

	protect children and adolescents from junk food marketing	on the impact of junk food marketing among adolescents. This action is aimed at promoting front-of-package labeling warnings in Argentina as a fundamental policy to stop ultra-processed food marketing, misleading advertising, and to guarantee consumer's right to information. This article is part of that action	enfrentar el marketing de la comida chatarra	
4.	El Periódico: Obesidad, Salud en riesgo	Obesity: Health in risk	Facebook: https://www.facebook.com/watch/live/?v=449544509319069&ref=watch_permalink Youtube: https://www.youtube.com/watch?v=n8mGHnMh7hM&feature=youtu.be	
5.				
6.				

For internal use only: **To be completed by IDRC's responsible Program Officer**

Please complete the relevant sections directly within the FEH database: http://ic.idrc.ca/sites/feh/_layouts/15/DocIdRedir.aspx?ID=IC16-1689834993-197
Identify the project as: Gender neutral, Gender sensitive, Gender specific, Gender transformative • Gender neutral (not applicable): gender is not an operative variable or concept for this project. • Gender blind: ignored gender variables and did not promote gender equity. • Gender sensitive: considers gender variables, but does not (yet) involve action to address them. • Gender specific: acknowledges gender norms, roles and responsibilities and promotes gender-specific improvements. • Gender transformative: examines, questions and aims to change norms, roles and inequalities toward greater equity

Transformative organizations:
From the organizations involved in this project, indicate which ones were supported to build organizational capacity so that they are now in a position to play a more transformative role in their field or community? Place a check in the 'CAD' column if they are a Canadian organization.

Name of organization	Brief description of the specific means/activities by which the project supported increased organizational capacity	CAD

Contribution to IDRC's development outcomes
If the project contributes in a significant way to one or more of the 3 development outcomes, provide a short description of its contribution below. There is no need to complete this section for all projects, but only those with the most relevant stories that are of interest for the program to highlight.

Health for all:

Economic empowerment:

Gender empowerment:

Do any of the achievements described in this report or in relation to the development outcomes have the potential as a **communications story**? If so, briefly describe:

Annex 2. Cornerstore and food outlet data for Guatemala (Appendix A and B)

Appendix A

Corner store and proprietor profile in Guatemala

	Zone 1 (urban)	Chisec (rural)
Corner store profile		
Median years of store (range)	8 (2-40)	5 (1-27)
Average hours of store open/day ± SD	14.14 ± 1.21	14.26 ± 1.31
Clients who purchased during interview ± SD	12.06 ± 8.06	7.73 ± 4.25
Proprietor profile		
Median years of interviewees (range)	37 (18-68)	31 (22-45)
Male interviewees	12	7

Source: interview during fieldwork 2019.

Appendix B

Table. Number of Corner Stores, Fast-Food Outlets, and Schools in 3 Neighborhoods[a], Guatemala, 2018

	Neighborhood Socioeconomic Status		
	Urban		Rural
Characteristic	Middle	High	Low
Neighborhood area, mi²	1.03	1.27	0.98
Schools and food outlets, number (number per mi²)			
Schools	26 (25)	19 (15)	15 (15)
Corner stores[b]	193 (187)	87 (68)	204 (208)
Fast-food outlets[c]	42 (41)	60 (47)	0
Supermarkets[d]	5 (5)	5 (4)	0
Farmer Markets[e]	4 (4)	3 (2)	1 (1)
Median (range) number of outlets within each school buffer[f]			
Corner stores	11 (10–12)	3 (1-5)	11 (9.5–17)
Fast food	0	5 (2.5–9)	0
Markets	0	0	0
Supermarkets	0	0	0
Schools with no store within the buffer	0	1	0
Mean Retail Food Environment Index[g]	12.6	8.3	12.9

[a] One high- and 1 middle-socioeconomic status neighborhood in urban Guatemala City and 1 low-socioeconomic status neighborhood in rural Chisec, Guatemala.

[b] Stores with sufficient product types to complete a fill-in or quick, single-meal shopping trip, often located as a storefront within the primary residence, usually part of the informal economy.

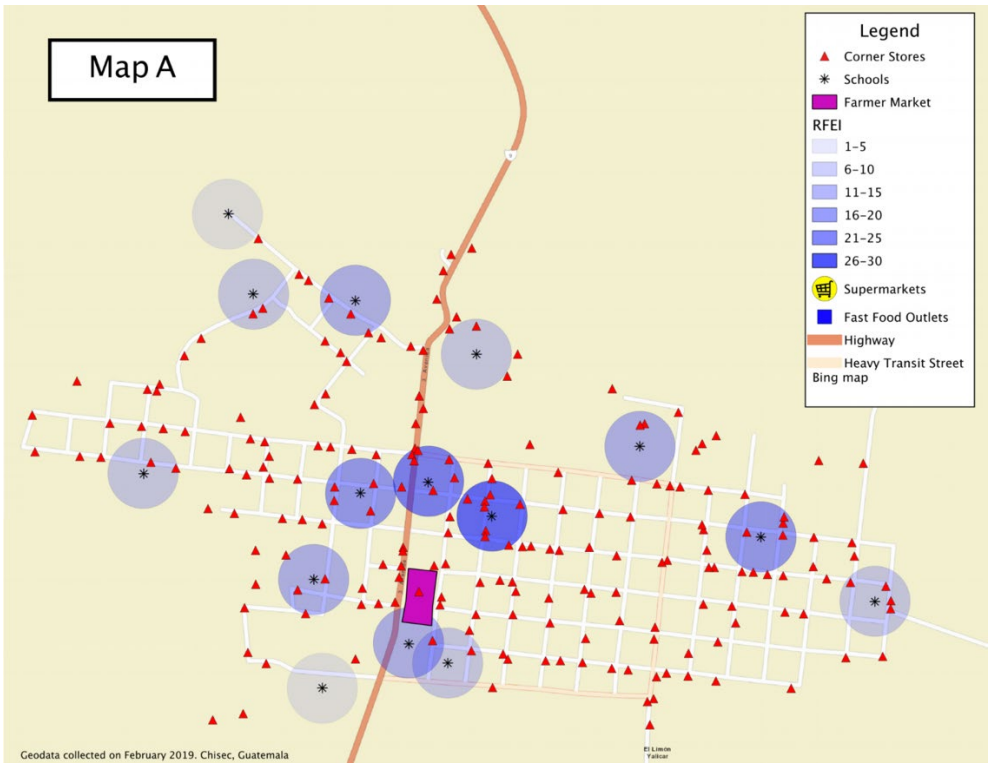
[c] Stores that prepare food in a few minutes and have no table service; includes to-go meals (eg, McDonald´s, Pizza Hut, Pollo Campero).

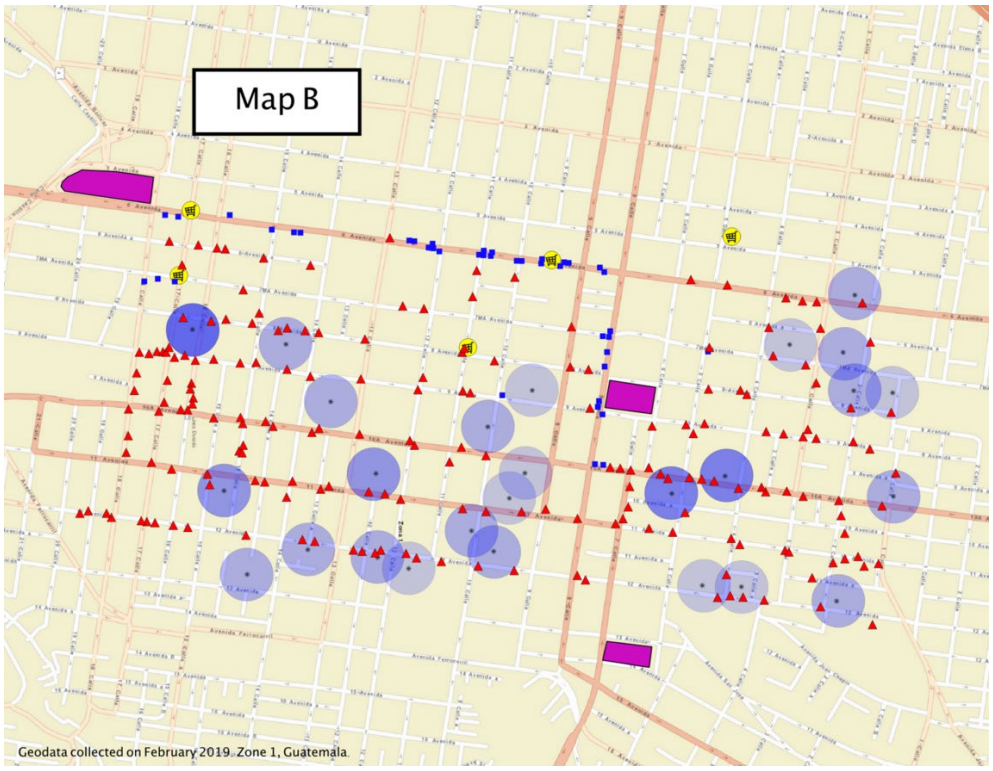
[d] Self-service shopping stores (usually chains) with a large variety of products, including fresh produce.

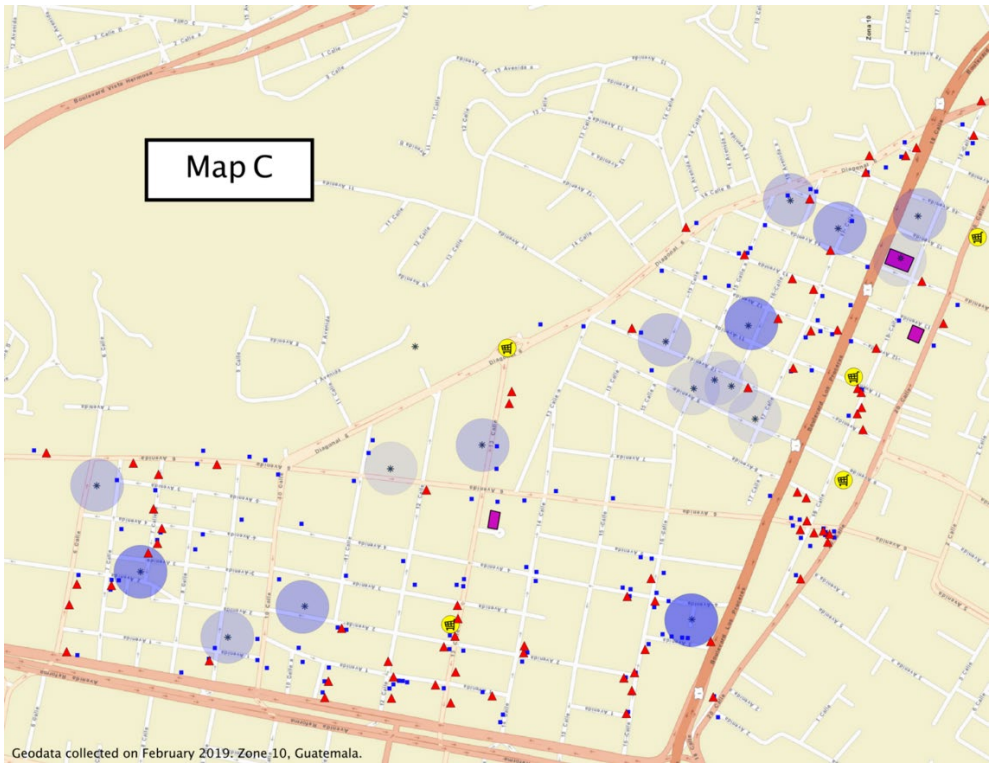
[e] Municipal outlets that mostly provide fresh produce from local farmers.

[f] Buffer of 150 meters (0.09 miles) around schools.

[g] The ratio of unhealthy to healthy food outlets: the higher the score, the less healthy the environment.




Map B
Geodata collected on February 2019. Zone 1, Guatemala.


Map C
Geodata collected on February 2019. Zone 10, Guatemala.